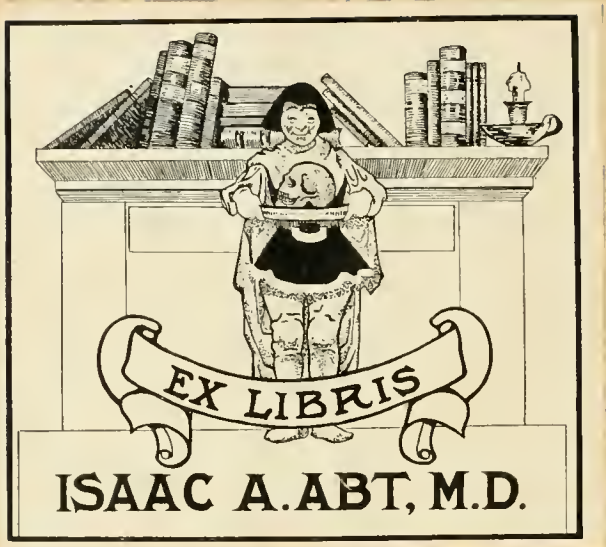
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J. RIDDLE GOFFE, PH.B., M.D.

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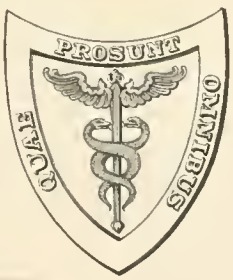

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A Case of Papular Erythema following Vaccination.

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ORIGINAL ARTICLES.

A CASE OF PAPULAR ERYTHEMA FOLLOWING VACCINATION.

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IN the simple operation of vaccination it is possible to convey syphilis, leprosy, septicæmia, and perhaps tuberculosis, if due precaution is omitted. But the well-authenticated instances where even so common a disease as syphilis has been conveyed through vaccination are very few. The many evil results which are popularly ascribed to "bad virus" are due either to injury or irritation of the vaccinated part, to the accidental infection of the pustule, or to a personal idiosyncrasy which leads to the development of a rash, such as sometimes follows the ingestion of certain drugs or articles of food.

Irritation of the vaccine vesicle may lead to severe dermatitis, cellulitis, and subsequent ulceration. Infection of the vesicle or pustule by atmospheric germs may induce erysipelas, furunculi, and contagious impetigo, which latter affection may be inoculated elsewhere by means of the finger-nails, and give rise to a pustular or crusted eruption which is very apt to be mistaken for "generalized vaccinia."

The systemic reaction after vaccination may induce eruptions of varying types. These may appear before the development of the vesicle, but are most frequently met with when this is at its height. They may be erythematous, urticarial, purpuric, and even vesicular or bullous in character, but present no specific features which would indicate their vaccinal origin. These eruptions may depend upon some abnormal condition of the patient, in which case the vaccination cannot be regarded as the prime cause of the rash, inasmuch as it merely evokes an eruption which was already latent and which might have appeared spontaneously or from any one of a variety of causes. Frequently, however, the vaccinated subject is in normal health, and the vaccinal eruption, like a drug rash, can only be attributed to idiosyncrasy.

A not uncommon form of erythemato-papular eruption is illustrated in the following case and by the accompanying chromo-lithograph:

In November last I was asked to see a two-year-old child under the care of Dr. Pierson, of Morristown, N. J. The arm presented a well-developed vaccine pustule, drying into a blackish crust (ninth day). Around this were considerable redness and swelling, although there was no indication that the vaccine lesion had been injured or irritated in any way. The face was somewhat swollen, and spotted with a few irregular erythematous patches. The trunk was nearly covered with a bright red erythemato-papular eruption, which occasioned the infant considerable distress. The lesions consisted of pin-head-sized, follicular papules, mostly aggregated in small, rounded patches and confluent upon the middle of the back, where the skin appeared red and smooth. The papules were numerous upon the palms, and there were a few upon the soles. Upon the extremities (except near the vaccine pustule) the eruption was by no means as copious as upon the trunk.

The eruption had appeared early in the morning of the preceding day (a week after vaccination), upon the vaccinated arm. In the evening it had developed upon the trunk. After a very restless night the eruption had become quite general, as already described. At this stage the photograph was taken. During this second day of the eruption the patches upon the trunk became smoother and less angry in hue, although they had increased somewhat upon the arms and legs. The skin was still hot and itchy, gentle rubbing of the back proving very grateful to the little sufferer. The temperature marked 103½°. The treatment consisted in a laxative dose of calomel and the application of a lotion containing oxide of zinc in lime water.

On the following morning the eruption was much smoother and paler. Some of the small discoid patches on the trunk presented a bright peripheral ring with a dull-red or livid centre. Nearly the whole surface of the child's body was involved by the eruption, and the small areas of normal skin presented a strong contrast with the affected portion. The eruption faded rapidly, and the drying of the vaccine crust proceeded as though no rash had occurred.

VAGINAL VERSUS ABDOMINAL SECTION IN DISEASES OF THE FEMALE PELVIC ORGANS.

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THE rapid evolution of the surgery of the female pelvic organs is one of the great things of this part of our century. Question succeeded question in quick succession until many felt that the end had been reached, and all that remained was the task of perfecting what had been developed. Hardly had we settled down in complacent contemplation of our results with the Trendelenburg posture when we were rudely shaken by this cry of the "vaginal method." Turn from it as often as we may, it yet sings in our ears, and will not be silenced. Intrench ourselves behind a resolution to see in it nothing of good for our patients; view it as a new hobby upon which those of shallow judgment are riding to notoriety, not to honest repute; decry it in all and every way, and it will not down. This is proven by the experience of the past year in this country alone, not to mention what has occurred abroad.

We are to be congratulated that such has been the result of the agitation, for it shows the virility of the subject, and proves that there is a great deal in it for our consideration. As a matter of fact, it is probably the last great question in the surgery of the female pelvis, and deserves to be treated as such by our best men.

Vaginal section has already been injured by exaggerated claims in its behalf. It is folly to talk of driving abdominal section from the field with it, for the reason that conditions will always occur which can be so much better met by the former that no good surgeon would decline to employ it. I think also that the vaginal section will always serve as subordinate to the abdominal, even though it diminish the frequency of the latter one half or two-thirds. This belief is based upon the acknowledgment that abdominal section must sometimes be used to complete the work begun through the vagina. In other words, there are cases supposedly entirely amenable to vaginal section, but which demand, as the operation proceeds, a better operative field, which can only be had by combined section. This single admission shows the interdependence of the methods, and suggests that wherever the boundary between them be drawn it must be made movable; nothing hard and fast can be tolerated.

It is interesting to recall that vaginal section not so long ago held the vantage-ground in this territory, and was driven out except in the case of carcinoma because of its poor results. This was due to its faulty technique in part, and in part to a lack of familiarity with the actual condition which could be present with a diseased uterus and appendages. Through abdominal section it has now informed itself and perfected its technique, and again comes forward for recognition.

Our attitude in this contention can be best expressed by assuming one hundred as the total of all cases of disease in question now recognized as suitable for section. One year ago I thought this could be divided equally between the vaginal and the abdominal. I now think seventy-five can be assigned to vaginal section, leaving twenty-five to be treated by the abdominal.

As the indications for or against depend largely upon the dimension of the diseased area or growth, one must admit that the earlier the operation is done, the greater the chance for vaginal section. So, assuming that one could observe all cases of uterine and adnexal disease from the outset, it is probable that the ratio would be still further increased in favor of the vaginal route.

Beginning this work at Bellevue Hospital in February, 1892, we have now performed seventy-two vaginal sections, with three deaths, covering every species of disorder for which it has been advocated. This ignores vaginal hysterectomies for carcinoma done in the years prior to 1892, for we wish to eliminate from this discussion as much old timber as possible. What we have to say is based upon our own work; work in no way original, however, although it has not been checked by the observations of others, for we tried to approach the subject with an unbiased mind and aimed at independent work, so that when informed from personal experience we could compare conclusions with cotemporaries and with those who had preceded us. It is evident from this statement that we are prepared to modify our conclusions when it can be shown that they are not properly based.

With this understood, we now submit a statement of conditions favorable, on the one hand, to vaginal section, and, on the other, to abdominal section.

Exploratory incisions. There are certain obscure conditions of the appendages of the uterus and sigmoid flexure in which exploratory abdominal section has become a recognized operation. Accurate vaginal and rectal bimanual palpation under ether is insufficient to discover enough gross lesions to account for symptoms. Direct palpation or inspection is needed for diagnosis. For instance:

CASE I.—A young married woman, the victim of constant pelvic pain and dysmenorrhœa, came to the writer for operation, having been told by competent authority that nothing short of removal of the ovaries would effect a cure. The pain was referred to the region of the left appendages. Examination without ether revealed what appeared to

be a thickening of the tissue at the base of the left broad ligament, the region being very tender. Under ether the thickening was less marked, but there appeared a sufficient contrast with the same region upon the right to leave the diagnosis in doubt, especially in view of the constant, long-continued complaint of pain. A free incision was made into the cul-de-sac. A careful and thorough palpation of all the structures in the pelvis was made with two fingers, and nothing abnormal could be found. The appendages were drawn into the vagina, and inspection, as well as palpation, showed that they were normal. The patient was up in a week, and, as so often happens after an exploratory incision in such cases, was cured by the operation.

Or take another instance (Case II.). Following curettage and trachelorrhaphy an inflammatory mass developed in the outer upper region of the right broad ligament. Supposing it to be salpingitis plus ovaritis, the cul-de-sac was opened with a view to removal or evacuation. To our surprise tube, ovary, and surrounding peritoneal area were normal. But as the swelling was all the more evident it was carefully palpated with a view to operation. The uterus was drawn down by volsella and two fingers were swept over the entire pelvis. First over the posterior surface of uterus, then the anterior, then along the upper border of the broad ligaments, then down into the paravesical fossæ, thence over the bladder, the anterior pelvic, and lastly the posterior pelvic walls. The following abnormality was in this way mapped out. The outer upper region of the right broad ligament, including its line of connection with the pelvic wall, contained a hard mass; between it and the uterus was a distinct sulcus, in which the tissue, though thickened, appeared in fair condition. To the front, the right paravesical fossa was wellnigh obliterated, the outline of the linea terminalis from the attachment of the broad ligament forward to near the symphysis was obscured all by soft swollen tissue, which evidently was nothing more than a collection of pus connected with and springing from the mass in the broad ligament. We were now at liberty to select an exit for the pus. This could be had in two ways. A direct incision above Poupart's ligament, turning up the peritoneum, reaching the pus about the pectineal eminence. Another route, and the one selected, was directly from the vagina. The cul-de-sac was closed; then, in order to reach the pus and at the same time avoid the ureter, an opening was made as in anterior colpotomy; this was extended beneath the peritoneum, upward and outward to the region of induration, whence the pus thus freely escaped.

Displacements fixed by adhesions. From several cases we select one (Case III.) in which the uterus was retroverted, ovaries prolapsed, and both, with the tubes, were bound down by firm and old adhesions. For two years prior to operation the patient had been subjected to vaginal tamponade for the purpose, as was said, of stretching the adhesions, so as to permit the uterus and appendages to be raised by a pessary. The folly of this policy was never better illustrated, for the organs remained, as they always do, in the abnormal position. Free incision of the cul-de-sac gave easy access to the structures. These were readily stripped of their adhesions, and then by means of Alexander's operation they were permanently placed in proper position. Easy and speedy recovery marked this case.

Ovarian tumors. All such tumors small enough to be contained, wholly or in large part, in the pelvic cavity should be removed by vaginal section. Tumors large enough to reach beyond the umbilicus, especially if they are pedunculated and are wholly outside the true pelvis, can be best treated by abdominal section. This observation applies with greatest force to multilocular colloid growths, but even then it is susceptible of modification in favor of vaginal section if it can be shown that both ovaries are hopelessly diseased. Then hysterectomy being permissible, sufficient opening is secured to evacuate properly and withdraw even such colloid growths. If this be true of these latter tumors, it applies with greater force to unilocular cysts with more fluid contents. From this it must appear that while tumors wholly outside the pelvis can be best treated by abdominal section, many of these can be reached by the vagina, provided it be proper to remove the uterus. In these cases it is wise to operate with the hips somewhat raised, else the intestines and omentum will occupy the field, and are apt to cut off the escape of fluid, which then tends to ascend and accumulate just under the abdominal walls.

CASE IV.—An intraligamentous ovarian cyst of the left side, with dimensions about equal to the fœtal head at seven months, was removed per vagina through the cul-de-sac. Some difficulty was experienced in enucleating the sac. This was overcome, however, by opening the anterior fornix, through which the sac was easily removed. Our experience in this case impressed us with the advantages of the anterior over the posterior line of approach in the intraligamentous growths. By this route most of them can be removed without entering the peritoneal cavity. After reaching the under surface of the peritoneum in the utero-vesical fold, it is only necessary to push aside the tissue with the finger, when the wall of the sac contiguous to the lateral uterine wall is easily reached and punctured. Subsequent enucleation can then be readily made. By hugging the uterus well up to the region of the body before attempting puncture of the sac, one easily avoids ureter and bladder. Hemorrhage is readily controlled by forceps.

Case V. *A small pedunculated ovarian cyst (size of fœtal head at term).*—The cyst was adherent to the pelvic floor, was therefore readily reached and quickly removed. All such cases are eminently fitted for the infrapubic operation. Solid or fluid, hard or soft, benign or malignant, the route through the cul-de-sac gives easy access and ready control of each and all.

Case VI. *Extra-uterine pregnancy.*—This was an example of an extra-uterine fœtation, in which incision, evacuation, and drainage brought a speedy cure. Bleeding points were many, but they were secured by forceps, which were left in place forty-eight hours. This is a condition which, prior to rupture, one can always elect to reach by the vagina. The tumor from first to last is well down in the posterior regions of the pelvis, and is easily reached through the posterior vaginal wall. It may be necessary to remove the uterus, however, for without this addition we may have excessive hemorrhage. Still, if one can get hold of the connection of the mass by clamping upon its two sides, outer and inner, bleeding can be stopped. After the placenta is fully formed, the child being alive, the suprapubic route would no doubt be preferable. Touching those cases, whether early or late, in which from antecedent rupture or otherwise the fœtus is dead, the infrapubic route will meet every requirement, as we have then little more than to evacuate and drain.

Inflammation and suppurative disease of the appendages, including tubercular disease. This field is particularly rich in opportunities for vaginal section. In fact, there appears to be no stage which positively contraindicates it. It offers the best means of checking the ravages of acute inflammation, thus tending to the highest kind of conservatism; it affords opportunity for the partial plastic operations upon the adnexæ and uterus, and it gives us the best operation for suppurative disease of these same adnexæ, when their removal is demanded, as in tubercular disease and in the destructive inflammation of both appendages.

It is interesting to note that this class of cases has furnished the battle-ground of this question. But the increasing belief that the uterus must go with the appendages, that hysterectomy in destructive double adnexal disease is required, and, further, that plastic so-called conservative operation upon the uterus and appendages can be done through the vagina bids fair soon to settle the question in favor of vaginal section.

Case VII. *Acute processes.*—This is an instance of acute salpingitis and pelvic peritonitis following abortion at two and one-half months. The uterus was cleansed and packed with sterilized gauze; the cul-de-sac by a free opening evacuated of turbid serum. The inflamed appendages were not disturbed, a loose gauze drain being carried into the cul-de-sac, which was first washed out with sterilized water. Finally, the vagina was loosely packed with gauze. This was removed at the end of forty-eight hours, the final result being all that could be asked.

This case illustrates what will probably be a common application of one step of the infrapubic operation, namely, the incision into the cul-de-sac with a view to drainage. This step appears to promise much in mitigating the damage which befalls the appendages in the face of the inflammations which come to them through those very common causes—abortions and gonorrhœa. The cleansing of the uterus, together with free drainage from the pelvic peritoneal area, seems to be the rational way of treating such cases, but it is a self-evident proposition that to be of service it must be done early.

Case VIII. *Acute puerperal metritis, etc.* In connection with the preceding case the present one illustrates the ease with which one may go to extremes when necessary in puerperal septic cases. A woman was septic five days, the form being sapræmia rather than mere sepsis. In ten minutes the uterus was removed and the operation completed. The relaxed and dilated state of the whole genital tract makes the operation exceptionally easy. From this we infer that all such cases are peculiarly fitted for the infrapubic operation.

Chronic processes. For illustration, a synopsis of three cases is now given.

Case I.—By means of *anterior colpotomy* the uterus was anteverted, the fundus and the appendages were brought through into the vagina. The right appendage was normal, the left diseased. The left was removed. The remaining organs were then returned to the peritoneal cavity. The opening in the peritoneum was closed, that in the vaginal wall left open. The uterus was curetted and packed; patient out of bed in a week.

Case II.—By means of posterior colpotomy an adherent and purulent ovary and tube were discovered on the left side. They were removed, a clamp being used. Upon the right side the appendages, being normal, were not removed. The uterus was treated as in Case I. and the patient did quite as well.

Case III. represented a double ovarian abscess and double pyosalpinx. The pelvis was practically filled with the mass and the associated adhesions. The uterus was first cut out, and then the left and, lastly, the right appendages were removed. The process was tedious, and, owing to the intimate and firm attachment of the rectum, this intestine was torn. No attempt at closure was made, as the opening was small. The recovery was quick, but a fecal fistula remained for two months, when it finally closed spontaneously.

Fibroid disease of the uterus. The tumors when of small size are more amenable to vaginal section than almost any other condition. This has already been well brought out at the Obstetrical Society in this city, to whose proceedings I refer for more specific remarks in this direction.

In brief, it may be said that all fibroid tumors lying chiefly in the pelvis are suitable for morcellation by the vagina, the intraligamentous for instance. Pure myomas and fibro-cystic tumors, even though they extend as high as the umbilicus, may also be brought within the limits of vaginal section, but not so with the hard, pure fibroid growths. It is difficult to fix any limit for these, but in general it may be accepted that where such tumors are wholly above the pelvis and fill the hypogastric region they had better be removed by abdominal section. Especially is this the case if the pelvis is narrow and deep; but we find much encouragement to the removal of these growths by the vagina when we contemplate the remarkable work accomplished for so many years in the removal of submucous fibroids by vaginal morcellation.

Objections. After all has been said it is plain, however, that there are objections to vaginal section which are sufficient to deter many operators from adopting it. Let us see what they are. The conformation of the pelvis does exercise a decided and, it may be, a controlling influence. All deep, narrow pelves render vaginal section difficult, and in the case of partial operations, such as removal of but one appendage, when thickness and rigidity of the pelvic floor, as may be met with in some women, is added, will practically forbid it. In the presence of a male pelvis in a stout woman with a narrow vagina one should be slow to adopt vaginal in preference to abdominal section. In this connection I quote from an article already published in the *American Journal of Obstetrics*, vol. xxxi., No. 2, page 5:

"The anatomical condition which presented to me the greatest difficulty was that found in large women with the male pelvis. The deep pelvis with its comparatively narrow outlet was usually found to contain a uterus with unusually thick and inelastic utero-sacral ligaments. I also found in some of these cases a considerable depth of tissue (fat and connective tissue) in the make-up of the pelvic floor. Douglas's cul-de-sac was deep and narrow, and the lateral fossæ of Douglas were wide and roomy. It is in these lateral fossæ that the diseased appendages commonly rest; under the above conditions it was not always easy to reach and enucleate them and then draw them into the vaginal opening. Such a pelvis, however, would offer no special obstacle if the condition demanded hysterectomy, for then the prior removal of the uterus would give easy access to the appendages, no matter where located within the true pelvis. After such removal the opening at command would be almost equal to the confines of the recent pelvic excavation, and through it, as has been shown here, large pus-tubes and ovarian abscesses could be safely removed. Clearly, then, an element of obstacle in this work is the uterus itself. If the operator planned to remove this organ as a part of his operation, he would have before him no greater procedure than a vaginal hysterectomy, one, too, which was far simpler than the same procedure when executed for carcinoma. A vaginal hysterectomy for cancer generally meant as much encroachment upon tissues and organs about the uterus as was compatible not so much with the integrity of adjacent structure as with the life of the patient. A vaginal hysterectomy for inflammatory disease of the uterus and appendages and for fibroid disease meant, on the contrary, freedom to hug the diseased tissue as closely as possible. In the one, bladder, ureters, and rectum might be in constant danger; in the other they are excluded from the field with the utmost ease. No adventitious guides or guards are needed; such things become, in fact, a hindrance rather than an aid.

"Referring again to partial operations upon the female pelvic organs, such as salpingotomy, oöphorectomy, resection of ovaries, excision of pyosalpinx, etc., I find that the thinner the subject and the more shallow and roomy the pelvis the greater the ease of procedure. Another factor likewise exists, as already mentioned, in the make up of the pelvic floor. The thinner this is the easier becomes manipulation."

The claim is made that the operation is liable to be incomplete in the case of pus-sacs. No doubt this is true of the past, and perhaps at the present with some operators, but the youth of the operation accounts for this. The same objections formerly held good with abdominal section in such cases, as is shown by the number of inoperable cases that used to be reported.

Another objection is that viscera are more liable to be injured. This relates chiefly to the rectum, and is no doubt true, but in spite of it the cases do as well ultimately as similar ones done by abdominal section. Such cases when treated by abdominal section require drainage, and prolonged drainage, as a rule. This predisposes to hernia, so that against a temporary vagino-intestinal fistula in vaginal section one must put hernia with abdominal section.

Herniæ are not common after vaginal section, for if they were we would have heard more of them, in view of the long time vaginal hysterectomy for cancer has been a recognized and oft-performed operation. The claim that sepsis is more common is not borne out by the experience of operators. It is true that the average temperature after vaginal section is higher for the first two or three days than after abdominal section, but this applies only to cases in which the forceps instead of ligatures are used.

The same comment applies to the objection urged on the score of the offensive vaginal discharge. Here again the claim rests against the forceps rather than the ligature. But, after all, the objection is one readily controlled by proper vaginal douching, and is relatively an unimportant objection, when the advantages of vaginal section are considered.

Advantages. These briefly stated are: As much safety as abdominal section, and this, too, at its in-

ception, leading one to believe that with the same relative time and attention given to it that abdominal section has secured, it will be safer. The recovery is more rapid and the after-condition is better, because herniæ and omental and intestinal adhesions are less common.

at time of operation. The pudenda should be shaved; the vagina and cervix should then be cleansed, green soap and water being thoroughly applied with a brush. This measure must never be omitted, but if one case calls for the brush more than another it is the virgin vagina, the vagina with rugæ. Of course,

FIG. 1.

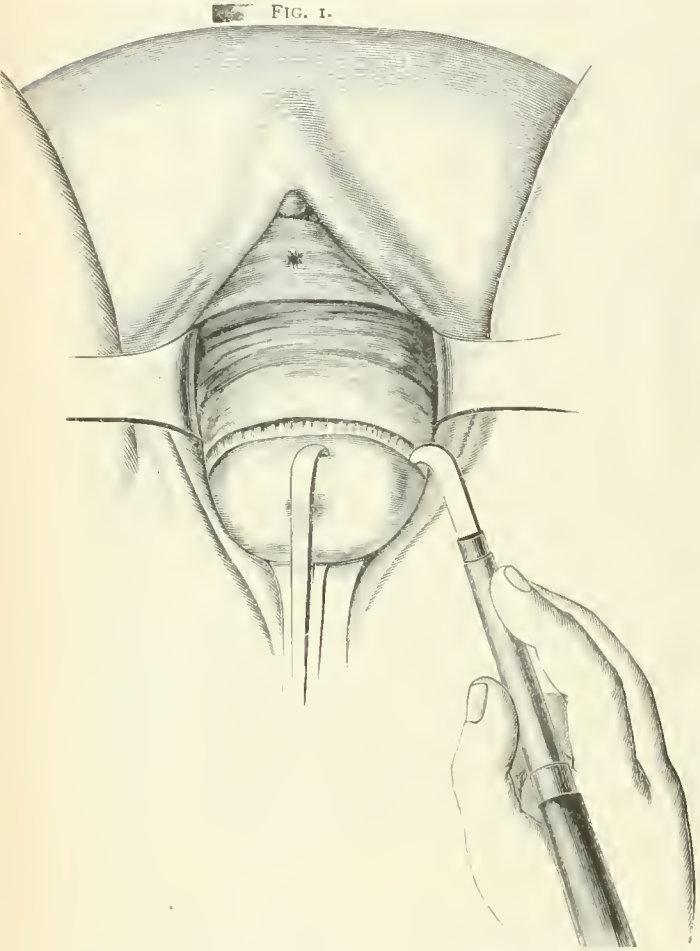


FIG. 2.

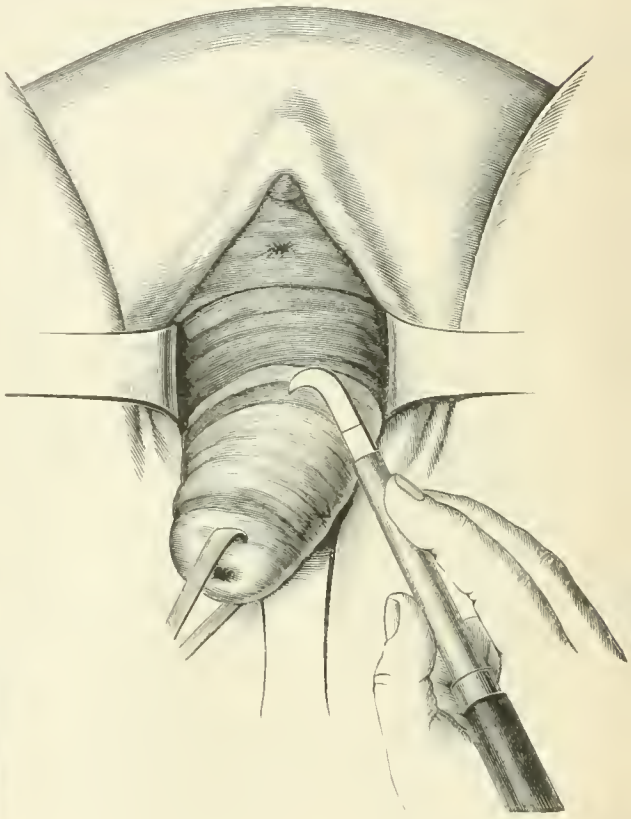


Fig. 1. Vaginal hysterectomy. Initial application of cautery knife.
Fig. 2. Vaginal hysterectomy. Cautery knife in action.

Finally, we beg leave to say that, from all that has been said and done in this subject by the various operators, we might as well admit that a revolution is taking place in our methods of dealing with the uterus and appendages, and it is safe to say that most of the operations done now above the pelvis for conditions specified in this article will soon be done from below. It is merely a question of learning how to do it.

Operation. The diet should be light the day before, food being taken as late as six hours prior to operation. Twenty-four hours before the operation a brisk cathartic should be given. Six hours before operation the lower bowel must be thoroughly washed out by a copious enema of castile soap and warm water. The bladder should be carefully emptied

the upper surface of the external genitals, the vulva, the anal regions, and the buttocks must be subjected to the same process of cleansing, the brush being used sparingly on the delicate structures of the clitoris and vestibule. The entire surface, internal and external, must now be washed off with 1 : 1000 bichloride of mercury solution, and this in turn washed away with warm sterilized water.

When all this has been carefully executed, the patient is ready for any one of the several operations done by the vagina.

If the uterus is to be retained, and is to be curetted and packed, this step is now carried out. The débris of the curettage is then removed by washings of 1 : 2000 bichloride of mercury, and the patient is ready for the next step. Let us suppose this to be

an operation upon the appendages—some plastic or conservative procedure. In that event the operation is anterior colpotomy.

The body of the cervix is caught with a volsella just below the anterior utero-vaginal junction. Strong traction is then made (Figs. 1 and 2), while with the cautery knife a transverse incision is carried through the vaginal wall from one side to the other about coincident with the above junction. If the uterus is small, this incision need go no further than the sides of the cervix, and by this we mean the line of junction of the anterior and posterior halves of the cervix; but if it is large, it should be extended thence downward and outward half an inch or more, onto and through the latero-posterior vaginal wall. The bladder is next separated from the uterus, using the index and middle finger for this purpose (Fig. 3),

If it be the enucleation of a sub-peritoneal fibroid on the anterior face of the uterus—that is, anterior to the broad ligaments—we proceed to this at once, holding the field of operation against the vaginal incision by pressure from above. If it be the removal, in whole or in part, of an ovary, a tube, or the enucleation of a fibroid at the fundus or on the posterior face of the uterus, posterior to the broad-ligaments, we antevert the uterus and bring the fundus and body through the vaginal incision into the canal (Fig. 4). This can be best done by bringing through first one of the cornua, after which the remainder of the organ is made to follow. Several instruments have been devised to further this step, which is the most difficult in the operation, but nothing is so good as the two fingers of the operator working through the incision, aided, if necessary,

FIG. 3.

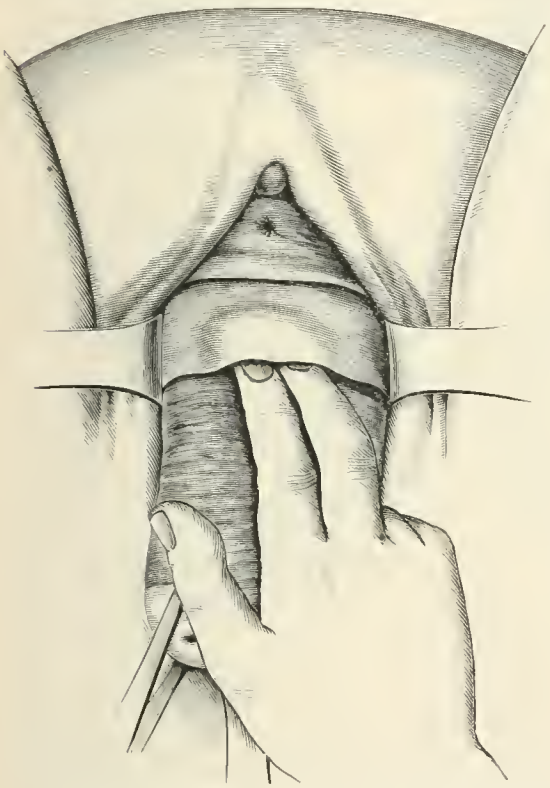


FIG. 4.

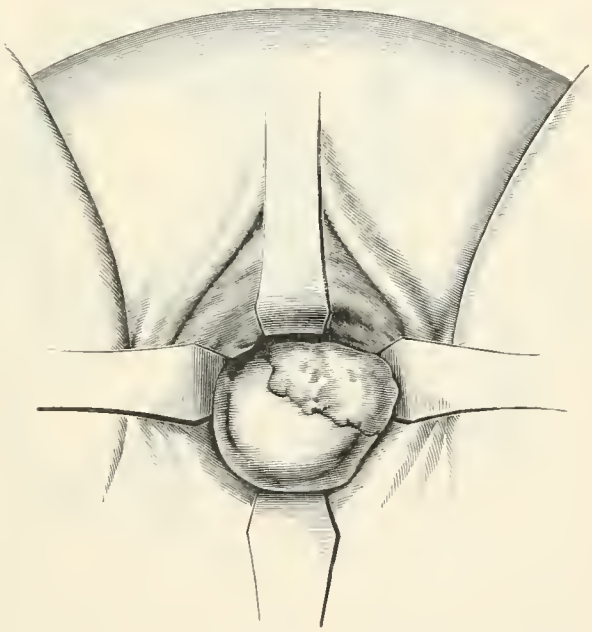


Fig. 3. Vaginal hysterectomy. Enucleating with fingers after preliminary cutting of vaginal wall with cautery knife.
Fig. 4. Anterior colpotomy. Fundus uteri and left ovary drawn into vagina.

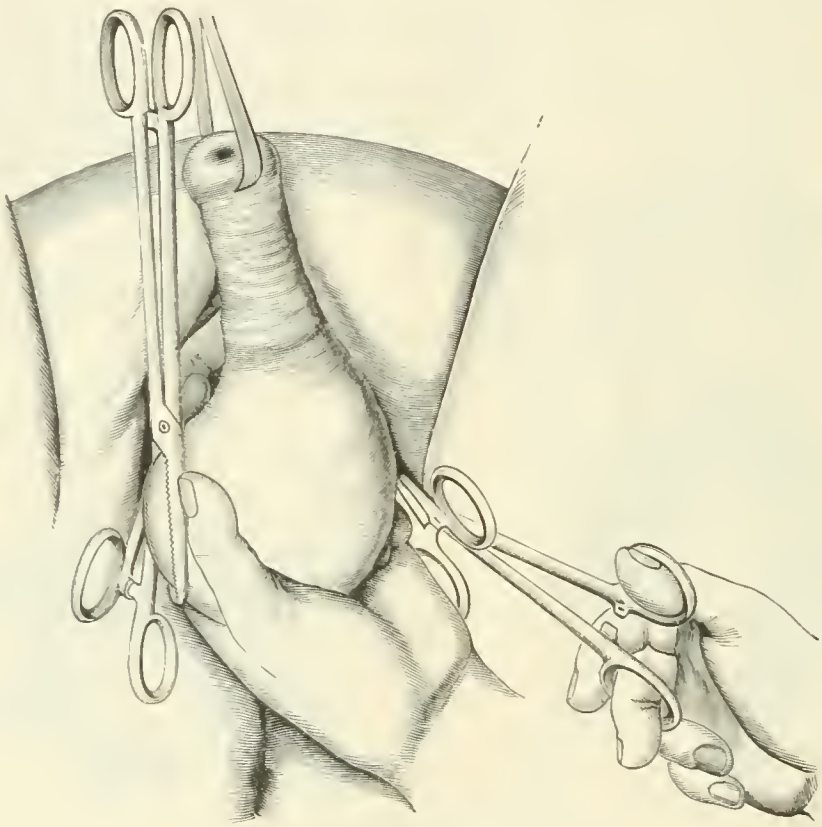
and the utero-vesical fossa is entered. Sweeping the fingers right and left, the bladder and ureters are pressed well aside. Still using the two fingers, the several viscera, including uterus, broad ligament and appendages, intestines and bladder are carefully palpated. Finding the conditions favorable to plastic or conservative operations upon the uterus or appendages, we proceed according to the problem presented.

by those of an assistant, placed in the rectum for the purpose of keeping the uterus forward. After the organ is drawn well into the vagina we act in accordance with the problem before us. Fibroids are enucleated upon the same plan as prevails under other circumstances—that is, the capsule is cut through and the growth seized with a volsella, and is worked out of its bed with the aid of the fingers and the scissors. Deep sutures of catgut or fine silk

are then passed, for the double purpose of closing the opening left and checking hemorrhage. If the ovary is to be operated upon or removed, it is drawn through into the vagina (Fig. 4), being reduced in size where necessary by aspiration or incision. When in the vagina it is at the command of the operator, and can be removed in whole or part as need demands. These statements are applicable to the tubes, which should also be brought out into the vagina, being previously emptied of fluid contents by aspiration.

involved bruising of the vesico-vaginal connective tissue, the cut in the vaginal wall may also be closed. If the contrary has been the case, it is best to leave the cut open. It may be sometimes necessary to pass from anterior colpotomy to hysterectomy, as where, for instance, we discover that both tubes are purulent and that the ovaries are similarly involved. This can be easily done by carrying the incision around the entire utero-vaginal junction, and then proceeding to the removal of the uterus, as we shall

Fig 5.



Vaginal hysterectomy. Forceps applied to lower segment of the right broad ligament and ovarian artery.

The ligation and removal of an ovary (which should be done independently) are, in general, simpler than the same operation upon the tube, because of the more extended blood-supply of the latter. In removing a tube tie as much of the mesosalpinx as you can, this generally is all of it; then ligate the uterine end of the distribution of the ovarian artery by including every structure at the cornu, except the tube; hug this closely with your ligature. Next enucleate the tube, and tie such bleeding points as appear. Having completed the operation, the uterus is returned to the abdominal cavity, and the divided peritoneum of the utero-vesical fold is reunited with catgut suture. If the operation has not

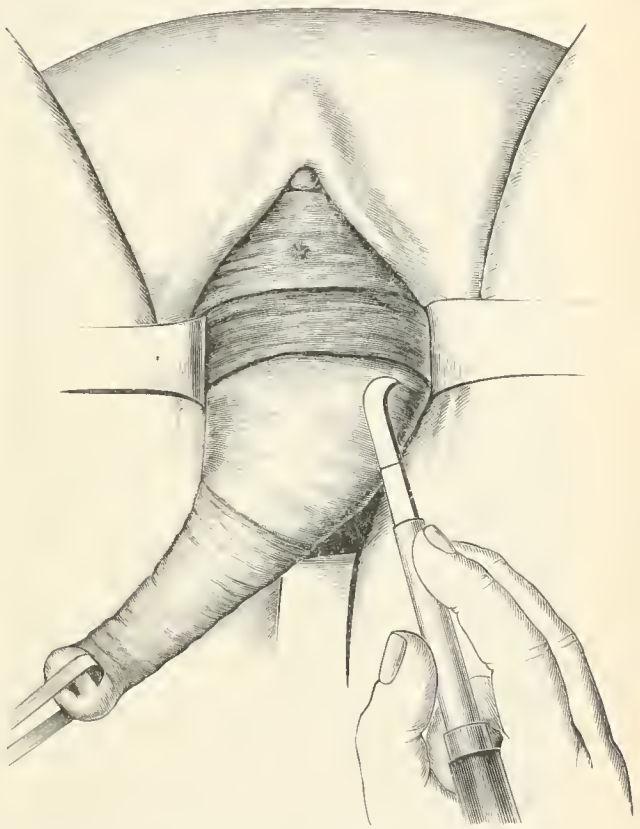
next describe under vaginal hysterectomy, with evacuation and removal of diseased appendages, such as pus-tubes, ovarian tumors, etc.

Posterior colpotomy. This section is resorted to for purposes of simple drainage, as in acute affections involving the cul-de-sac. It is also a part of the operation which looks only to the evacuation of pus-sacs, the removal of small ovarian tumors, the severing of adhesions, and exploration of the pelvis. It consists of a vertical section of the posterior vaginal wall, extending from the utero-vaginal junction to the bottom of the cul-de-sac. It can be made with knife or scissors, as there is small risk of hemorrhage, and, as a rule, can be closed when the work is done,

unless pus or some such infecting substance as the contents of a dermoid has been encountered.

Vaginal hysterectomy, with evacuation and removal of diseased appendages, such as pus-tubes, ovarian tumors, etc. It is assumed that the patient has had the usual preparation, that the bladder and rectum have been emptied. A soft rectal bougie should now be carried into the rectum and passed as far as it can be gotten to remain. The vulva and the vagina having been cleansed, as already described, and the cavity of the uterus, and especially the cervical portion of it, having been curetted and washed out with a solution, 1 : 1000, of bichloride of mercury, the removal of the uterus should be the next step. The cervix is grasped back and front with a blunt volsella and drawn forcibly down as near the vulva as possible. The vagina at the utero-vaginal junction is then cut through entirely around the uterus (Fig. 1). This accomplished, the enucleation of the cervical portion is next in order (Fig. 2), to be followed by measures designed to control hemorrhage. If it be by ligature, this is passed first on one side, then upon the other, so as to secure the uterine artery, which can be easily palpated. If, on the contrary, the clamps be preferred, one is placed on each side, so as to secure the entire lower half of the attachment of the broad ligament to the uterus, which will include the artery. These clamps are made to hug the uterus as closely as possible, and are guided into position by the thumb and index, or index and middle, fingers, thrust one in front and the other behind the broad ligament, at the uterine attachment. The vessels of the lower segment of the uterus being secured by clamp or ligature, the organ is cut free and the enucleation is carried on with the index and middle fingers (Fig. 3) until the bladder is separated and the utero-vesical space in front and the cul-de-sac behind have been opened into; the vessels at the sides are not molested, the vaginal wall being merely pressed back to give easy access to them when ligatures or clamps are to be applied. If the case is simple, that is, if there is no extensive matting together of the visceræ, as in bad cases of suppurative disease, the peritoneum upon the base of the bladder and in the cul-de-sac should be attached with a single stitch (catgut) to the corresponding vaginal wall. The way is then clear for the application of the clamp or ligature, as one may elect, to about its middle, still applying steady traction; the upper attachment of the uterus is next brought down; this is clamped (Fig. 5) or ligated, after the manner already described, and then the entire uterus is cut out. The succeeding steps depend upon the condition presented. If it be a simple pyo- or hydrosalpinx, these, along with the degenerated ovaries, are enucleated by the fingers, aided by long forceps, and are then clamped or ligated at the attachment to the broad ligament and cut away. If it be an ovarian tumor, this is drawn down to the cut in the vaginal roof, is there tapped, and after the contents have been removed the sac is withdrawn much after the manner which prevails with abdominal section.

FIG. 6.



Vaginal hysterectomy. Enucleation of uterus with cautery knife without clamp or ligature.

The serious difficulties arise in connection with the conditions of pelvic abscess. We may not be able to remove the uterus as cleanly as has been described, but may be forced to take it out by morcellation. Cut it out segment by segment, clamping the bleeding vessels as they appear. The posterior lower half is first removed, then the anterior. In this procedure we may open promptly into a pus-sac in the cul-de-sac. After cleansing this out, we proceed to the upper half of the uterus. This should be cut open antero-posteriorly. After removing the two segments, we use the cut ends of the cornua as guides to the pus sacs, tubes, and ovaries of either side. Feeling one's way carefully, making traction upon the sacs, which by this time can be differentiated, first one side then the other is drawn down, enucleated, and withdrawn. It may be that this process of enucleation will have to be

done in the depths of the pelvis; if so, one cannot use too much caution, for it is in such cases that visceral injuries are most liable to occur. Patience and intelligent perseverance will enable one to surmount the difficulties, however, so it is rare that one will be forced to call to his aid abdominal section. This, however, should be done if the intestines high up in the pelvis have been injured. Having opened above the pubis, the patient should be thrown into the Trendelenburg posture and the injured intestine quickly found and repaired. If any sacs, or parts of sacs, remain they should be taken out; the pelvis must then be washed out with sterilized water and a loose gauze drain placed in the bottom of the pelvis, extending thence through the vagina.

After vaginal hysterectomy of any kind it is wise to leave the vaginal cut open, draining through it by means of a good strip of gauze, which extends from the depths of the cul-de-sac to a proper dressing over the vulva. This precaution may be optional in clean cases, but it is an absolute necessity in all pus-cases.

If ligatures have been used, they are left long, are tied together, and placed in the vagina. If clamps are employed, they are looked over carefully to see that each is secure, doubtful ones being further guarded by tying the handles firmly together. The handles of the clamps are then encircled with a thick layer of absorbent cotton, which is also in contact with the vaginal drain, whose function it furthers. A soft-rubber retention-catheter is finally placed in the bladder, and the operation may be said to be complete. The catheter is self-retaining, by reason of a bulb or collar at the vesical end of the instrument, but to realize its object it must be plugged or knotted at its free end. By removing this plug or knot at intervals of two or three hours the bladder is properly emptied and the dressings are kept clean. This upper cotton dressing and the catheter are the same for all cases of vaginal section.

This article would not be complete were we to omit mention of the method of removing fibroids by morcellation.

The preliminaries up to and including separating the vagina from the cervix are identical with the process already described. The departure begins after the cervix has been enucleated, and the lower vessels ligated or clamped. This consists in cutting away, piece by piece, first the cervix, then the body of the uterus, dragging each piece forcibly downward with blunt-toothed volsella; bleeding points are caught as they appear and ligated or left in the keeping of the clamps, as convenience dictates. Working after this fashion, with knife and scissors, protecting the vaginal walls with retractors, the tumor is dragged piece by piece into the vagina, and then cut off. In this way the operation is really performed within the vagina, sparing the cavity above it. As already intimated, the dressing and later treatment of the case coincide with those adopted in other vaginal sections.

A word must now be said about enucleation without clamps or ligature. It can be done, but it has its limitations, and should be performed with the cautery. We confess that a ligated or clamped vessel makes us less anxious, and as there is no valid objection which is at all weighty, we prefer to use one or the other.

The best cases for this operation are women past the menopause or who have already been rid of their appendages—the uterine vessels being with all such persons more or less atrophied.

It is done as follows (Fig. 6): After the usual preparation, seize the uterus at the cervix and burn through the vagina at the utero-vaginal junction. Now keep up forcible and continuous traction upon the cervix, at the same time burning through the attachments to the uterus as they descend. This burning must be made within the true uterine tissue rather, the cautery being driven firmly into it. It is best after each segment has been burned through to relax the traction, to see if the vessels just severed bleed; if they do, sear them at once, and continue it until they are closed. Proceeding in this manner the uterus is quickly peeled from its envelope, and the cornua are brought into view. These are burned through and their stumps seared. In the removal of the tube and ovary it is wiser to use ligatures or clamps. This having been done, the operation is complete. The after-dressing and treatment are the same.

Speaking now of vaginal hysterectomy in general, clamps should be removed in from forty-eight to seventy-two hours, after which the patient should receive a night and morning douche of warm boric acid or permanganate of potash solution, for purposes of cleanliness and comfort. Ten days cover the usual limit of convalescence in bed, the patient being permitted, under ordinary circumstances, to take the sitting position in bed at the end of a week. The catheter should be removed when the clamps are taken off. Ligatures should be cut out at the end of two or three weeks. The bowels are treated much as in abdominal section, but there is one comfort the patients with vaginal section can enjoy, that is, morphine for the relief of pain. This drug does not appear to have as troublesome consequences after this form of operation as after abdominal section. With this, Mr. President, I must close.

Recapitulation of conditions favorable on the one hand to vaginal section, on the other to abdominal section in diseases of the female pelvic organs:

Vaginal Section.	*Abdominal Section.*
1. A shallow and wide pelvis in a thin woman.	1. A narrow and deep pelvis, especially if deformed.
2. Explorations of the pelvis.	2. Explorations above the true pelvis.
3. Visceral adhesions in true pelvis.	3. Visceral adhesions in false pelvis or above.
4. Displaced and adherent uterus.	4. Large ovarian cysts, especially multilocular, with colloid contents.
5. Smaller ovarian cysts, especially the intraligamentous and parovarian.	5. Large fibroids, especially the firm and hard.
6. Smaller fibroids, especially the soft.	6. Extra-uterine pregnancy at time of rupture and at term.
7. Extra-uterine pregnancy, up to seventh month, and after death of fœtus.	7. Extra uterine pregnancy, with tumor wholly above brim of pelvis, and not in relation with uterus.
8. Pelvic hæmatocele.	8. Pelvic abscess pointing upward.
9. Puerperal hysterectomy.	9. Conservative operations under conditions unfavorable to vaginal section, such as a narrow and deep, or a deformed pelvis, that is contracted.
10. Acute inflammation of appendages, with peritonitis involving cul-de-sac.	
11. Inflammatory destructive diseases of the appendages, including tubercular disease.	
12. Pelvic abscess pointing downward.	
13 Conservative operations on appendages that lie in true pelvis.	

THE THERAPEUSIS OF THE SAINTS.

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THE modern instances of the belief in simple faith or superstitious worship in the cure of disease, as exemplified in the almost daily reports of marvellous recoveries attributed to the efforts of "faith-curists," "mind-healers," "layers-on-of-hands," and the like, furnish this century's analogue of the ancient custom of invoking the aid of the saints in the relief of the afflicted.

Superstition, Paul Lacroix has said, is the inevitable consequence of every religion or Deism, and to the simple, ignorant mind it naturally becomes more powerful than the religion itself, being more awe-inspiring and impressive. In the history of all nations and peoples the superstitious belief in the efficacy of deified personages in alleviating pathological lesions has prevailed.

In the ancient Pagan times the divinities were the precursors and parents of pathology—the old gods are dead, but the heavens and the maladies still retain their intimate relations. The patrons, once placed in Olympia, were transferred to Paradise. In the heaven of the old Pagans there were supposed to be lodged a long succession of gods and goddesses, whose province was to look over the diverse maladies of humanity. The material sheath of our soul, with its miseries external and internal, was supposed to be carefully guarded by this collection of deities.

The matrons contemporary with Augustus Cæsar well knew whom to address for the correct manipulations and treatments of childbirth. In the first instance they prayed to Pertunda to facilitate advantageous union or meeting of the sexes. Then followed appeals to Mena, on whom depended the regularity of menstruation. Materprema had a special mission in keeping the uterus in condition for the proper reception of the male seed.

Having carefully and successfully pursued their respective functions up to date, these deities were dismissed, and, conception happily ensuing, Fluonia was summoned to care for the growing germ in the womb, and keep out the evils of abortion and miscarriage.

Then grand Diana stepped in, and looked to the preservation of the life of the fœtus. Juno Postversa labored to put it in good position, and stepped aside for Lucina, who was famous for her ability as an obstetrician, and with her little helpers, the Nixii, who pushed hard for the contractions, effected a safe delivery.

The members of the Celestial aristocracy having successfully brought the child to light continued their monopoly in the person of Jupiter Diespiter, or possibly Cunina, to whose care the life of the child was entrusted. Throughout the period of lactation, with mystic passes over the breast, Rumilia produced a sufficient flow of milk.

Turning now to the more enlightened Christian woman of the latter period, we find her still happy in the protection of the plethoric heaven of sanctified personages, but to a less degree than her Pagan sisters. With the advent of Christianity, Saint Agatha replaced Rumilia in exercising an influence, for good or bad, as the case might be, over the female mammæ. Invocations to her were deemed the best means of relief from mammitis. The older Christain woman addressed her prayers to Notre-Dame-de-Montserrat, Saint Marguerite, and worshipped at Lourdes and at the statue of Saint Guignolet. The latter will soon be a thing of the past, if its original does not acquire a better degree of proficiency, as it is fast disappearing under the scratches of sterile husbands.

Happily, if parturition is seemingly neglected by the saints, the pathological disturbances of the human body are plentifully supplied with patrons and patronesses from this overworked society, each of whom has a designation, either curative or causative, in some disease. Saint Guy had under his

domination the neurosis, chorea, often called "danse de Saint Guy," or St. Vitus' dance. Formerly they danced before the chapel of this saint to be relieved; but since the discovery of the efficacy of arsenic Saint Guy is neglected, and the neurologist has usurped his domain. Saint Giles struggled with the hopeless task of carcinoma, besides lending adjunctory assistance to the others in the obstinate cases of epilepsy. Saint Gervasius gave many a sharp reminder to the unfortunate under his care, and has to-day a deadly rival in the lithiates and salicylates. His rheumatic clients are rapidly forsaking him, and, in fact, his memory is only perpetuated by an occasional charm or amulet among the lower classes. Saint Genou is fortunate in the possession of two helpers in the cure of gout, viz.: Saint Mor and Saint Gueslain. Coquillart bears witness to the efficacy of the former in his *Monologues des perrecques*, in which is seen "I come to Saint Mor des Forrez to be relieved of the gout." Homage is rendered to both these auxiliary saints in the old comedy, "Pasté et de la tarte," in which a character cries out,

"Que la goutte
De Sainct Mor et de Sainct Gueslain
Vous puyssiez tresbucher a plein."

In cases of toothache, each jumping pain was considered the individual handiwork of Saint Apolonia, and to her the victims of this distressing minor ill looked for relief. Our *confrères*, the dentists, have played sad havoc with this saintly lady, and, like Othello, "her occupation's gone."

By his good offices Saint Main saved the itching commoner from scratching. If we can correctly judge from a passage in Ambrose Paré (des Venins), this same individual brought succor to individuals afflicted with dermal manifestations of syphilis. Paré says: "An ointment of quicksilver cures what is called commonly the malady of Saint Main;" and, after a glance through the *Commentaires sur Dioscoride* of Antoine du Pinét, we are lead to believe that this saint looked after other cutaneous eruptions such as tetter, eczema, milk rash, etc.

Saint Reine was a valuable constituent of this sanctified system of therapeusis, curing thrush and scald-head. Having recovered from a severe and terrible fever, this Saint went to church to give thanks for his recovery. Jesus was duly thanked, but, turning to a picture portraying Saint Anthony with a white beard, he said: "Y no a vos, barba blanca, que tan mal su fuego me trato, y me quemo en mis calenturas." This warrior was not willing to thank Saint Anthony with his white beard for the fire that had almost consumed him during his fever.

Saint Avertin, Saint Romain, Saint Gildas, and Saint Mathelin divided among themselves the various forms of mental aberration. In the very early days Gheel seems to have been a kind of Lourdes, for, according to the *Cornhill Magazine*, a certain St. Dympna, who lies buried there, was supposed to have *les faibles d'esprit* under her special protection. It was the custom, therefore, throughout the Netherlands for persons who had insane relatives to take them to her tomb and there offer special prayers to her for their recovery. If tradition is to be relied upon, the saint was by no means loath to give proof of her beneficent power, and wonderful stories are told of the way in which she used to restore reason to those who had lost it. Still, even in those times miracles were not wrought every day. Some of the sufferers who went to Gheel had to wait for months—nay, years—before they were healed, while others were never healed at all. And while waiting they had to be taken care of. At first the innocents, as St. Dympna's *protégés* were called, were all lodged in little huts or caves around the church, but as the fame of Gheel spread abroad they increased in number, and it became necessary to make other arrangements. They were then boarded out with the peasants living in the village, and there were so many of them that at length every family had its innocent. If a child was constantly crying and fretful, says Panckoucke, in his *Dictionnaire des Proverbes*, he was committed to the care of Saint Avertin. In his *Harangue de Midas*, Bruscambille writes: "There is no receipt compounded by any doctor or apothecary, no matter how wise, which is potent in the malady of Saint Avertin."

Saint Eutrope was supposed to cure hydrops, as we can see in the nouvelle cxxix of Bonaventure des Periers; but the invocations to this patron were in vain in the celebrated case of Louis XI. If M. Chéreau is well informed, Saint Eutrope (eau trop) is but one of that series of saints whose province originated solely from a quibble or witticism on their name. Eugène Noël advanced this theory, and gives a few examples. Saint Genou, who was the solace of those afflicted with rheumatic or gouty joints, was probably one of the number; Saint Mammard (mammelle) ripened the abscesses of the breast; Saint Marcou (mal au cou) was supposed to have the power of effacing scrofulous marks and curing the King's evil; and Saint Fiacre carried solace to those unfortunate enough to suffer from affections about the anus—particularly vegetations—from the resemblance of Fiacre to "fic."

F. Brémond says the hypothesis of Noël becomes an absolute certainty in the case of the patron of the inhabitants of Lourcine and the Hospital du Midi, and quotes the interpretation of the name of this saint as given by his master Jacob. "The recoveries are divided between the saints, who take

the monopoly of cure to themselves, and sometimes a saint has been invented expressly for the malady, as, for example, when the venereal malady first made its appearance there was soon found, where no one knows, a Saint Foutin to take the pox-stricken sufferers under his auspices."

From the North to the South, the saint most respected in sacred therapeutics is Saint Hubert. The number of individuals that he is reported to have cured of the "rage," or hydrophobia, is incalculable. He was given, it is true, the assistance of Saint Mathurin, but what help is he to the great patron of the chase, whose name is as familiar to the smooth chin as to the white beard, and we dispense with details, for this great patron had a glory which admits of no addition.

In the middle ages Saint Lazare was the busiest of all. In our times he is virtually in a lethargy of idleness. It is true that we continue to call some of the sanitary stations "Lazaret," but these are nearly always empty, and when they contain a patient his malady is far different from those of olden times. Saint Lazare was the guardian of the leprous, more commonly called in France "ladres" or "mesels." In the 18th century, in France alone, there were more than two thousand hospitals for lepers. To-day, thanks to science, the universal vanquisher of cant, hypocrisy, and superstition, a case of leprosy is cause for excitement and discussion in all the journals and among those versed in this pathological rarity.

Saint Sebastian was invoked for the "peste venenosque," and had for his assistant Saint Roch. In *les Aventures du Baron de Foeneste*, d'Aubigné shows a Gascon who had fallen into the charnel-house of the plague-stricken, and employs his priest to say a mass to Saint Roch. Like this Gascon, the pious inhabitants of a certain village in Provence, even to the 19th century, cry once a year "misèricorde" in the chapel of Saint Sebastian. In the south of France Saint Hermantaire is still supposed to look after children who are timorous, nervous, or who are subject to convulsions, and Saint Victor calms their fever. If one consults him, devout inhabitants of Marseilles will tell you that, after the Virgin Mary, no one possesses the power of more miracles than Saint Victor.

Saint Gerbold was much occupied with dysentery, while Saint Regnauld was not indifferent to those suffering with affections of the bladder. In all cases of colicky pains, whether from excesses in eating or otherwise, supplications were addressed to Saint Erasmus. To the bibulous was given a patron in the person of good Saint Martin. Needless to say, few candles were burned for him, as curing the evil in this instance was worse misfortune than its continued existence.

If we consult Henry Estienne's *Apologie pour Herodoté*, in the preface of his edition of that great historian's work, we find that the curious duty of Saint Bernardin was to keep a guardian eye over the "suffocations of the matrix." If one should be asphyxiated, for relief he would invoke the aid of Saint Eloi.

The last alphabetically of this long list of pathological patrons was Saint Zachary, who cared for the dumb.

Félix Brémond, who was called to account by a friend for his campaign against superstition, and was accused of citing the customs of olden times with the present day in his arguments, denied the anachronism, and, among others, quoted from page 198 of *Pèlerinage de Saint Hubert*, by Abbé Bertrand, printed in Paris, 1869, the following: "In order to prevent the 'rage' they carry devoutedly on them objects blessed or which have touched the miraculous stole of Saint Hubert, such as crosses, rings, chaplets, etc." M. Brémond also produced modern books in which were a prayer to Saint Christopher to keep off sudden death; an oraison to Saint Vite for defence against the rage of ferocious animals; an invocation to Saint Blaise for the cure of sore throat, and a pious invocation to Saint Magnus for protection against venomous insects. M. Brémond, in addition, promised his friend a copy of Paul Parfait's *l'Arsenal de la dévotion*, in which he could revel in superstition to his heart's content. M. Brémond, on reading that the Queen of Spain was expecting her confinement, and had been provided with a bone of Saint John the Baptist, the comb of the Virgin Mary, containing three of her hairs; a chemiset of N. S. Jesus Christ, together with a reserve relic in case the fœtus would exhibit signs of recalcitrant royalty, the body of blessed Diégo de Alcala, suggested in his piquant, skeptical French manner, as a grand completion to this arsenal of saintly obstetrical aids, the following:

1. A wax taper from Notre-Dame-de-Montserrat, which the reverend Pierre de Bourdeilles, Lord of Brantôme, declares, in his fourth chapter of *Des dames galantes*, a strong aid to the Spanish ladies in childbirth.

2. The reliques of Saint Marguerite, which served Marie de Médicis so well, as told in the works of the celebrated midwife, Louise Bourgeois. But despite the assistance of the relics and the incessant prayers at Saint-Germain-des-Pres., she lay in agony 22 hours.

3. A piece of the robe of Saint Ignace, which R. P. Terwecoren says is equally efficacious to the mother fearing pregnancy, and the female who trembles lest the soft name of mother will never greet her ear.

4. An agnus ot white wax coming from the Chapelle Sixtine, which the Canon Barbier de

Montault remarks protects both mother and child during pregnancy and deliverance, and shortens and ameliorates the throes of labor.

5. A cordon of blue wool from Saint Joseph to expedite matters; for, says R. P. Huguet, "what is impossible for the doctors is easy for Saint Joseph."

6. The oraison of Sainte-Croix discovered in 1550, and reprinted in 1880, in Paris, in which are these words: "When a female finds herself in pregnancy, she is expected to read or repeat this prayer, or to carry it on her, and she will be expeditiously delivered; she will remain a tender mother, and when the infant is born, if the prayer is placed on its right side, it will be preserved from a great number of accidents." After generously offering these suggestions to the royal Christine, M. Brémond adds:

7. *A pair of forceps.* It happens sometimes that this instrument is not unuseful in accouchements, even of royalty. In the case of another Spanish woman of the royal blood, Eugénie de Montijo, in spite of a strong armament of saints' bones collected by herself and her august spouse, the "fers de l'accoucher" sensibly flattened the ears of the youthful scion, who was called by Cassagnac "Napoleon IV.," and who eventually offered up his life to the British Government in the war with idolaters in Africa.

To complete the list of the virtues and powers ascribed to the saints would take this short sketch too far. At first glance, many of these facts seem exaggerated and almost incredible; but when we have before us in our own day the much-vaunted powers of the waters of Lourdes, with their enormous patronage, drawn from the high as well as the low classes, and from every section of the world; the almost daily pilgrimages to other famous wells and shrines; the custom, still extant, of the exposition of saintly relics for therapeutic purposes; the frequent account of faith-cures in this country as well as in the old, we can readily believe that the world is by no means lifted from its superstitious ignorance by the rapid advances of pathology, and, strange to say, the very countries that have done most to advance science are the most tenacious in their old medieval fears and faiths.

CLINICAL MEMORANDA.

EXTENSIVE LACERATION OF THE ABDOMINAL WALL BY A BULL'S HORN; EXTRUSION OF THE INTESTINES; OPERATION; RECOVERY.

By JOHN A. WYETH, M.D.,
PROFESSOR OF SURGERY IN THE NEW YORK POLYCLINIC; VISITING SURGEON, MT. SINAI HOSPITAL.

J. D., male, aged fifty years, a strong, healthy farmer, weighing about 180 pounds, was gored by a bull at 9 A.M., July 21, 1893. As the animal rushed at and lifted him, one horn penetrated the left trouser-leg six inches below the groin, scraped the skin along the thigh upward until it struck the protruding abdomen one inch above Poupart's ligament and just outside the internal abdominal ring, where it penetrated the peritoneal cavity and ripped the abdominal wall obliquely for five inches from this point in the direction of the free end of the twelfth rib of the left side. The laceration in the skin was less extensive than in the muscular layers, although the integument was dissected or torn loose from its subcutaneous attachment for four or five inches in all directions from the upper margin of the wound. The other horn struck the patient just below the left axilla, tearing an ugly gash in the axillary space, dividing some of the vessels of the pectoral region, but, fortunately, not wounding the larger vein, artery, or nerves. In descending, the patient fell on the back of the animal, rolled to the ground, and scrambled to his feet. As he stood up he felt his intestines rush out into his clothes, and then fell unconscious. He was carried to the house, put to bed, and Drs. Card and Owen, of Mahopac, summoned.

I saw this patient at 6 P.M., nine hours after the accident. As it was getting late, every haste was made for operation. Chloroform was used. A large mass of small intestine, congested but not strangulated, dotted here and there with hair, shreds of clothing, and several bruised and dark spots, varying in diameter from one-fourth to one-half inch, protruded through the opening in the skin. A finger carried into this opening recognized a second and equally large mass of intestine lodged in a pocket between the muscles and the loosened integument. The opening through the skin was freely enlarged in order to expose the entire mass, which was now irrigated with hot boric acid solution (gr. vij to ℥j of water, boiled and allowed to cool to about 110° F.). A finger carried through the lower angle of the laceration in the muscular wall satisfied me that there was no intraperitoneal rupture with escape of intestinal contents. A mass of omentum, covered with clot and hairs, was tied off with catgut sutures, and the stump was later returned to the peritoneal cavity. Commencing at this angle of the wound a careful toilet of the intestine was made, after the entire mass had been irrigated as described above. Hot towels enveloped the coils above. Section after section of six inches each of gut was isolated and washed with soft, small sponges, wet in hot boric acid solution and squeezed nearly dry. The mesentery, from the deepest portion of the wound, was exposed and cleansed on both surfaces up to the intestine, and then this was gone over and returned to the peritoneal cavity. This process was repeated as rapidly as was consistent with thorough cleanliness until the entire length, estimated at fifteen feet, was reduced. The ragged edges of the torn muscles were trimmed where long shreds were hanging, a twist of iodoform-gauze was carried into the peritoneal cavity and out at the lower angle of the wound for safety drainage, in case of infection, and the wound closed by a single row of silk sutures passing through skin, muscles, fascia, and peritoneum, with tight approximation of the edges, except at the drain, where a single suture was only fairly tightened. The time consumed was one hour and forty minutes.

On the fourth day the temperature of the patient, which up to this time had not been over 100° F., reached 102° F., and there was considerable pain in the wound

at its lower portion. The twist of gauze was removed, and about half an ounce of odorless pus escaped. A smaller twist was reinserted, and this was removed daily for three or four days, when the discharge ceased. Nothing of interest occurred after this, and the patient recovered.

At this time, more than two years after the operation, the man is well. There is a small ventral hernia at the lower angle where the gauze drain emerged, the scar protrudes perceptibly, and, on coughing, a localized impulse is evident.

In analyzing this case some points of interest are suggested.

What should be the immediate management of cases where the intestines protrude?

(*a*) The arrest of hemorrhage is, of course, an immediate and vital necessity, but, fortunately, it is seldom a dangerous complication. The extrusion of the intestine takes place rapidly, and usually is so extensive that the large mass of omentum, mesentery, and gut arrests ordinary bleeding by self-compression at the opening in the abdominal wall. When bleeding occurs it should be controlled by catgut ligature or warm towel or gauze compresses.

(*b*) It is always advisable to restore the viscera to the peritoneal cavity as soon as possible. If, for any reason, this is not undertaken, the protruding organs should be kept warm and moist by being enveloped with towels or napkins, wet and kept moist with hot bichloride solution 1 : 10,000, or boiled water cooled down to 110°–120° F. The solution should not be carelessly employed, for, though absorption is limited from the exposed surfaces, a considerable quantity may leak into the general cavity of the peritoneum, with harmful result. Complete anæsthesia is essential when reduction is undertaken. For the final toilet of the soiled viscera I prefer the boric acid solution, but have also employed the 1 : 10,000 bichloride solution with good effect.

(*c*) The method of suturing wounds through the abdominal wall is of great importance. I am convinced that fewer ventral herniæ occur after the suture heretofore described than by any other method. Moreover, it occupies much less time than when a separate peritoneal suture and one or two muscular and cutaneous rows of suture are inserted.

(*d*) In all instances where a considerable mass of intestine has been exposed and is soiled, no matter how careful the toilet, it is advisable to insert a twist of iodoform-gauze for safety drainage. This precaution saved the subject of this report. It is usually removed on the third or fourth day, the sutures on the eighth or ninth day.

(*e*) In order to prevent adhesions between the exposed and inflamed coils of intestine and to forestall intestinal paresis, which occurs with peritonitis, this patient was given saline laxatives twice a day, commencing on the morning after the operation, and securing two or three movements a day for four or five days. Epsom salts and Hunyadi water were employed. Calomel triturates, gr. j–ij, at night are safe and effective. The minimum of morphine should be administered, and none at all if it can be dispensed with.

(*f*) After an extensive wound or incision in the abdominal wall a patient should not be permitted to bring any considerable strain upon the part involved until thorough union has been secured. I usually require six weeks in bed or about the room, and the recumbent posture for at least four weeks.

(*g*) An accident occurred during the operation which came near proving fatal. But for a precaution which should invariably be practised, and prompt action by all engaged, the patient would have perished on the table. On account of pain and shock, the attending physician had administered morphine in considerable quantity. This so dulled the respiratory sense that during the operation, and just as the last loop of intestine had been restored, although a very small quantity of chloroform had been used, the patient ceased to breathe, became almost instantly cyanotic, with jaws tightly clinched. With special forceps, pointed so as to take advantage of the slightest space or unevenness between the upper and lower rows of teeth, the under jaw was pried open, the tongue seized and drawn out, and artificial respiration by Sylvester's method performed. After several minutes of anxiety (at least five minutes, by common estimate of the five physicians present) the natural respiratory effort returned, and the operation was finished without further narcosis. I have in a number of instances seen death from arrest of respiration prevented by this precaution, without which, it seems to me, an anæsthetic should never be given. A wooden screw or wedge for separating the jaws, and a strong fixation gag, and forceps for holding them fast, a fixation forceps for the tongue, and sponges on holders are the essentials.

URETHRAL HEMORRHAGE; HÆMOPHILIA.

BY CAPTAIN A. E. BRADLEY, M.D.,
CAPTAIN AND ASSISTANT SURGEON, U. S. ARMY, FORT YELLOWSTONE, WYOMING.

MR. L., after an alarming hemorrhage during the night, asked me to see him the following morning; the history obtained was this:

Occupation, merchant; aged thirty-three years; unmarried; parents and other members of family all in good health. About a year ago was treated for some time in a Chicago hospital for some obscure bladder trouble, probably cystitis. Since that time he has used occasional boric acid irrigations, and passed a sound monthly. Because of the cystitis he has been carefully observing his urine for sediment.

Two days prior to his present trouble he noticed a marked deposit in the bottle, which he described so as to lead me first to believe was pus, but later he said the urine was perfectly clear when voided and the sediment only appeared after standing some hours. It being a cold night, it may have been granular or amorphous urates; of this I cannot be certain. Microscopic examination showed no pus in the specimens afterward obtained. For some days he had had some vague discomfort referred to the right abdomen, but no pain. His habits are temperate, and he has not had sexual intercourse since July of the present year. His sexual desire, however, has been strong, and he has been troubled with frequent annoying erections both night and day. On the day preceding my visit he had been standing nearly all day bending over a low table working at photography; he remembers his erections were troublesome, but is not certain that he injured himself in any way.

About seven in the evening, and about one hour after passing normal urine, without any warning, his attention was called to a warm trickling down his thigh.

Investigation showed blood spurting from his penis in alarming quantities. It could be controlled only by grasping the organ tightly in the hand, release of the constriction being at once followed by the hemorrhage. A large bath-towel was saturated and the carpet showed two spots covered with clotted blood, not smaller than dinner plates. He believes he lost more than a pint of blood, and I think this is a small estimate.

He was much exhausted, and went to bed, though he slept but little, having occasional erections which renewed the hemorrhage. In the early morning he passed clear urine, which scalded one portion of his urethra and was followed by slight bleeding. He "milked" a clot from his urethra, which brought on hemorrhage again.

At noon he passed normal urine in my presence with no scalding, and but a slight trace of blood followed his milking process. He rapidly recovered his usual health.

I regret that I was unable to make an endoscopic examination. There was no infiltration into the tissues of the penis, and no pain except at one point near the scrotal junction, where there was slight tenderness, probably the source of the trouble. His abdominal uneasiness and the other symptoms first led me to think of renal trouble, which may indeed exist, but the hemorrhage was undoubtedly urethral.

Since childhood he has noticed a tendency to bleed profusely after slight injuries; nose bleed has many times given him much alarm; the hemorrhage from slight cuts, pin-pricks, scratches, etc., is controlled with difficulty, and a few years ago, while absent-mindedly biting his lips, he caused a slight abrasion from which blood spurted in alarming quantity. No other members of his family are bleeders, so far as known. While urethral hemorrhage may not be rare, I am unable to find in the works at hand any reference to bleeding similar to that which occurred in this patient.

CLINICAL LECTURE.

THE MEDICO-LEGAL ASPECT OF APHASIA.

By DR. C. K. MILLS.

A Clinical Lecture delivered at the Philadelphia Hospital.

Reported by M. V. Ball.

Aphasia has an important place in legal medicine not only from the fact that it is often combined with insanity, but because questions often arise as to the responsibility of the afflicted person or his testamentary capacity. In every case we must find out how far the patient is able to speak, how far he can make himself understood by speech, and how far he can explain himself by means of pantomime.

By pantomime we mean the use of signs for definite purposes, and it may be present with speech, and on the other hand it may be lacking, while speech is preserved. In bringing these patients before you, illustrating as they do various kinds of aphasia, I will dwell mainly on the medico-legal aspect of the subject.

In Case I. we have an old hemiplegic woman, who answers every question with a single recurring utterance, namely, "*la-la*;" she is paralyzed on the right side, and has been in the hospital many years; she understands everything that is spoken to her; she puts out her tongue when told. She plainly evinces her disgust by pantomime, when asked if she wants medicine, and yet the full extent of her vocabulary is "la-la."

Case II. is a man who replies to all questions with the two words, "*any one*." Here we see that the man likewise understands all that is spoken to him, but has only these two words to make his wants known.

Case III. says "*no*" to all questions, even when he means yes. Occasionally he utters an oath, but this utterance is involuntary and he is not responsible for it.

Case IV. is a man who cannot talk at all; when questioned he shakes his head. He understands what is said, but is unable to utter a syllable, although able to make his wants known in writing. There is no paralysis present, but as his trouble came on suddenly, and as the result of an accident, there was probably a hemorrhage.

Case V. is a woman, who, when asked her name, answered promptly, "B. Doyle;" when asked whether it was Bridget, she made some incoherent remark; when shown a penknife and told to name it, she replied that "she knew what it was, but could not tell the name of it;" when shown a key, she said it was for hiding things; a watch was called "money;" she said "she was going to say hammer, but she knew that is not right." After some effort she exclaims, "gold," and when asked if it is not a watch, she says, "yes, a hatchet." She is able to name correctly her hand and foot. This woman, like the others, is able to understand everything that is told her and has an extensive vocabulary, but certain words she cannot speak. She has a form of verbal amnesia. She is neither word-blind nor mind-blind, she recognizes objects and their uses; she can even recall the names of such familiar things as her hands and feet, but many other concrete nouns she cannot name.

Case VI. is a young woman who has been paralyzed for one and a half years. After the attack she had slight trouble with speech; she is an example of left hemiplegia. As a rule, only right-sided hemiplegia is accompanied by persistent aphasia, but when the person is left-handed, aphasia may be present in left hemiplegics.

Case VII. is a man who, when asked a question, responds, but in a very imperfect manner. He is neither demented nor word-deaf; he is able to make known his wants, but there is a paralytic condition of the muscles of articulation. The man has the power to propositionize, that is, to construct sentences properly and speak them.

Case VIII., an old man who is unable to stand without support, a complete hemiplegic, when asked his age, showed with his fingers that he was forty, but he looks at least sixty. He can only make a moaning sound, and, although understanding what is told him, is deficient in pantomime and resembles a demented person in his appearance.

Case IX. is a woman with verbal incoherency; she will start out well and then will come a word or phrase which has no connection with what has gone before it. Her language is a form of jargon. The patient is able to understand all that is spoken to her, and has a large vocabulary, but the speech is broken up by putting in words that do not fit; her reading is much like her

speech. Some patients read rapidly and fluently what is a jargon to others, the person reading understanding all the time what he is reading, but may not be understood by his hearers.

Having shown you these patients we will now test them in a medico-legal way as to their responsibility, The cases in which aphasics become involved are more often civil than criminal.

Aphasia, like deafness, tends to make a person emotional, impatient, quick to anger, and so occasionally crimes of violence may be committed in moments of passion that are clearly attributable to the infirmity. Insanity itself may be present. The insane wards of a hospital contain some aphasics, and so the same questions that apply to the insane in any court case may arise in connection with this disease. In examining an aphasic the question to be answered is not, is an *aphasic* responsible, but is this or that *aphasic* responsible. Hughlings Jackson illustrates the matter well when he says that the question at issue is not whether a piece of string will reach across a floor, but if this or that piece will.

One of the questions that may arise in a civil case is the one in reference to testamentary capacity, Can the aphasic make a will? Can he be held responsible for a note or any other piece of writing to which he has affixed his signature or mark?

Some years ago I was called to see a man who had been stricken with an attack of apoplexy, and who was living with a woman not his wife; after the attack he married the woman, and then dying left his money to her. An attempt was made to set aside the will on the ground that the man, being an aphasic, was not responsible. I could testify that he was able to understand everything I said to him when I saw him, and the will was allowed to stand.

Starr gives the following list of questions useful in examining cases of aphasia:

1. Has the patient the power to recall the spoken or written names of objects seen, heard, tasted, or touched?
2. Has the patient the power to understand speech and musical sounds?
3. Has the patient the power to understand written or printed words?
4. If he speaks voluntarily, does he talk clearly, does he mispronounce, does he misplace, or talk jargon?
5. Has he power to repeat a word after hearing it?
6. Is he able to read aloud, and, if so, does he understand what he reads?
7. Has he the power to write voluntarily, and can he read what is written?
8. Has he the power to write at dictation?
9. Has he the power to copy?
10. Has he the power to recognize the use of objects seen, heard, felt, or tasted?

The following is a subdivision: Has the patient the power to communicate his thoughts by pantomime? The power to understand signs, as well as expressing them, may be lost in some cases.

Let us test Case III. You remember his vocabulary consists of one word, "no." I hold a pen before him, and ask him if he knows what it is; he has not the power to name the object. When told to put out his tongue he does so, therefore he understands what I tell him; but when I ask him his age, he continues to put out his tongue. This is probably mere confusion from the examination, though it should be noted, as it may have some bearing in the matter. I ask him if the word on this paper is New York; he shakes his head in a negative manner. Is it Philadelphia? He moves his head in assent, it being correct. So we see he has the power to understand printed words. Further testing shows that he also understands writing. He can talk voluntarily only to a very limited extent, and only in monosyllables, as "no" and "no, sir." He cannot repeat words or letters, but, strange to say, he can count up to sixteen without any effort. Sometimes he talks a little jargon. This man knows what he wants to say, and understands what is spoken to him, but he will say "no" when he means "yes," and he is easily confused. He will not write to-day, although he has written a word or two on another occasion. He can make his wants known only with great difficulty, and therefore might be understood as meaning one thing when he meant another. The man has a motor aphasia, probably due to a lesion in and around Broca's convolution, with destruction of tissue in the neighborhood. He has a motor aphasia, a motor agraphia, and a loss of pantomime almost equal to his loss of speech, becoming very much confused when he attempts to use his head or hands except in counting.

Testing Case VII. we find that he understands what is said; that he can read written and printed words; that he has the power of voluntary speech; that he can repeat after others; and that he can write and recognize objects. His articulation, however, is very bad; he is not easily confused, and when I ask him to sign this note he does so, but he tells me he would not do it if it meant anything; he is in every way responsible and competent.

Examining Case V. we have a different state of affairs. You remember she understands what is told her, but when I ask her how old she is she replies, "five cents." When I ask her to count *five* on her fingers, she says "three;" therefore she cannot repeat after me, and her pantomime is bad. She knows the use of objects, but mixes up the names. She is not letter-blind—that is, she can voluntarily read individual letters, and she can read her own signature; but she might be cheated because, although she can speak and can understand, yet she cannot make her wants clearly known, for the reason that she may have intended one thing and said another. In getting the mark of this person to an I O U she places it far away from the proper position. A case is on record where a man by pantomime showed how much money he wanted to leave to another, but he made his mark in the body of the will instead of at the end, and the will was not considered legal. It is dangerous to guide the hand of the person, because it might be construed as a form of compulsion, and the document would not hold in the law.

I have thus been able to show you a few of the kind of cases commonly met with, and to indicate the way in which questions of a medico-legal nature may arise. The subject is of interest, and could be more fully treated had we sufficient time at our disposal.

MEDICAL PROGRESS.

Multiple Bacterial Infection in Certain Forms of Diphtheria.—Dr. Wm. Royal Stokes (*Boston Med. and Surg. Journ.*, Dec. 12, 1895), in reporting the bacteriological examination of nine autopsies on cases of diphtheria treated with antitoxin, says: "In eight of the nine cases of uncomplicated diphtheria to which antitoxin had been given the bacteriological examination at the autopsy showed a more or less well-marked invasion of the blood by the pyogenic cocci. In five cases the streptococcus was found in the liver, spleen, kidney, and blood of the heart." The same or other cocci were discovered in one or more of the other organs in the remaining cases, while "in the lungs of all these cases were found the bacillus diphtheriæ, streptococci, pneumococci, and the staphylococcus pyogenes aureus, either alone or in various combinations."

The recent demonstration of the comparative frequency of this poly-infection in diphtheria is a matter of very considerable interest. Barbier and others, basing their conclusions upon the bacterial examinations of the throats alone, together with clinical observations, were able to point out the existence of two distinct forms of diphtheria as early as 1891; one the simple infection by the bacillus diphtheriæ, the other a mixed infection with one or more of the pyogenic cocci as well. Two years later the general belief that the bacillus of diphtheria was only to be found in the local lesion was disproven by investigations which demonstrated its presence in the blood and material taken from the various internal organs of individuals dead of diphtheria. And still more recently, Wright and Stokes have been able to discover it present in the lungs of thirty out of thirty-one cases, while the various other internal organs showed it less constantly, but in a considerable per cent. of that number.

So far as statistics of the double or multiple infection have been collected, they indicate that from fifty to seventy per cent. of the diphtheria cases are of this nature, at all events; a clear majority. And since antidiphtheritic serum is known to have no specific influence in controlling germs other than the bacillus diphtheriæ, we must not expect its full curative effect in these instances, but should be content to obviate the dangers of a secondary infection in any case by an early and thorough administration of the remedy.

The Etiology of Obstetrical Paralysis.—In a recent paper upon this rather obscure subject Dr. G. L. Walton, of Boston (*Journ. Ment. and Nerv. Dis.*, November, 1895), offered the following explanation of its causation: That the brachial plexus already being brought up against the clavicle by rotation of the head away from the affected side, which also places the suprascapular nerve upon the stretch, exposes these trunks to excessive bruising and stretching during the separation of the head from the shoulder, that follows rotation in the strait, the shoulders being naturally restrained by the brim of the pelvis at this stage of delivery. Under the head of obstetrical paralysis Dr. Walton did not wish to include any except those occurring with natural labors, *i.e.*, without instruments, or even the use of traction by hands or fingers of the attendant.

Dr. Starr, in discussion, expressed the belief that the prognosis was uniformly favorable, as he had observed no adults with such paralysis. Exclusive of those instances where there is dislocation of the shoulder-joint, Dr. Walton concurred in this opinion, while Drs. Taylor and Leszynsky had observed cases that caused them to doubt if a perfect recovery was the invariable rule.

A Case of Congenital Aphasia (Aphemia).—Herzen (*Revue Médicale de la Suisse Romande*, 1895, No. 11, p. 600) has reported the case of a boy, five years old, otherwise apparently in good physical and mental condition, who was able to speak only a few words. The family history was good, and there had been no difficulty in the labor or in the pregnancy. The child had escaped the usual infectious diseases. When three years old he could pronounce correctly only three or four words, which formed his entire vocabulary. At this time he fell from a table about three feet high, striking upon his head, but not suffering any permanent disturbance. Consciousness was lost, and it was feared that death would result, but recovery finally ensued, without paralysis or convulsion. Subsequently the little patient acquired a few new words, whose number and pronunciation, however, were below those of a child of his age. Examination disclosed a symmetrical head, free from fissure or depression. The organs of phonation were perfectly normal. The child could open its mouth and move its tongue freely; also emit sounds, and articulate several words more or less intelligibly; but it was unable to formulate any phrase whatever. Its hearing and its intelligence were good. There was no trace of paralysis or of atrophy. The child was right-handed. The explanation of the condition present in the case related is referred to a congenital malformation of the speech-centers in both central hemispheres.

Death under Chloroform.—Dr. Murray-Aynsley (*New Zealand Med. Journ.*, vol. viii. p. 259) reports this unfortunate accident having occurred to a healthy female who was admitted to Christ Church Hospital May 6, 1895. She gave a good family history, but was a little anæmic and had a slight goitre. For the removal of a ganglion on the back of the left wrist she was placed under chloroform at 9.45 on the following morning, and was well under before the operation was begun by Dr. Nedwill. The excision had been completed and the chloroform suspended, when the patient began to move a little and vomited a little bile-stained mucus. A few seconds later it was noted that she was cyanosed, but still breathing naturally and the lungs expanding. She was inverted, the throat sponged, and the tongue drawn out. The pulse, however, could not be felt. She was replaced on the table, took several gasping breaths, and after a few moments ceased to respire. Nitrite of amyl, ammonia, and strychnine were administered, and artificial respiration kept up for an hour, air entering the lungs freely during this time. For the first half-hour slight and irregular sounds were thought to have been heard over the region of the heart, but none during the latter half of the time. No autopsy was permitted.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JANUARY 4, 1896.

THE MEDICAL NEWS BECOMES A NEW YORK WEEKLY JOURNAL.

WITH this issue THE MEDICAL NEWS removes its home from Philadelphia to New York and passes into the hands of a new editor. No other radical change has been made or is contemplated. The same familiar face will greet its readers every week, bearing its messages of scientific facts, of personal experiences, of recent discoveries, and of medical news. Messrs. Lea Brothers & Company, now of New York and Philadelphia, will continue as its proprietors and publishers. The editorial and publication offices are permanently established in New York. Dr. J. Riddle Goffe becomes the editor, and in so doing desires to express, in behalf of THE NEWS, a warm esteem for the retiring editor—a high appreciation of his unwearied and able services in the past.

THE MEDICAL NEWS, therefore, takes its place as one of the regular weekly medical journals of this city.

To you, our host of contributors and readers in every land, no new introduction is deemed necessary; but rather would we invite you, as tried and loyal friends, to join with us in a cordial housewarming in the new metropolitan home, where you will always be assured a hearty welcome and the same unwavering support in your efforts to advance the science and the art of medicine.

As an exponent and leader of what is highest and best in medical literature, THE NEWS will continue to advance the standard of hygienic and sanitary science, to voice the latest discoveries in every field of scientific investigation, and advocate all public measures that will redound to the health of communities and the public welfare. Its columns will be always open to the free and candid discussion of all questions pertaining to the advancement of medicine in its widest interpretation—to questions of interest and importance to the profession itself and to personal matters of individual right and justice. It does not represent any individual interest, nor school, nor clique, but aims to be an exponent of the highest and broadest interests of science and the medical profession.

The Science of Medicine is being rapidly revolutionized and rewritten, on what gives promise of being an enduring basis of scientific fact. The veil that has hidden from our view the mystery of diseased processes is being rent in twain, and a flood of sunlight is converting the workers of disease into manufacturers of antidotes against their own destructive powers.

It is the proud boast of the physical sciences that they have chained the great material forces of Nature and trained them to man's service. But the silent, secret microscopical forces working against man himself are the last to yield to his intellectual power. The triumph, however, is the greater and the glory is with us of the medical profession. It is a privilege to be in at the birth of what promises to become the crowning achievement of medical science and an unspeakable boon to humanity.

To test and extend the application of the new therapeusis is the work of the immediate future, demanding the accurate application of exact scientific methods. To the general practitioner is committed the trust, to him the scientific world looks for the account of his stewardship; and it is to him especially that the columns of THE MEDICAL NEWS are cordially opened as the most appropriate place for recording his triumphs, deductions, and conclusions.

Yet, after all, this is but one of many fields in which the physician and surgeon are constantly at work to relieve the sufferings of humanity. THE

MEDICAL NEWS will, as heretofore, be ever on the watch to present to the profession all the discoveries and improvements which may be made in all the departments of the science. It can point to fifty-two years of earnest service rendered to all the highest interests of the medical profession, and it will be the unswerving purpose of the new editors to surpass, if possible, this honorable record by the diligent utilization of the superior advantages of their metropolitan position.

THE STATE COMMISSIONER OF LUNACY.

THE Commissioner of Lunacy as an expert was editorially noticed by the *Record* recently, which goes on to say that "attention has been called more than once to the reprehensible conduct of the medical member of the State Commission in going upon the witness-stand for pay. That he has no right to do so in this State cannot be disputed, for his testimony in court, when it is given by him as an 'expert,' may send the prisoner to an asylum or a prison. As the doctor and his associates are bound by law to recommend the discharge of improper subjects from the former, it can be seen how dangerous must be his position if he has given testimony in a particular case." Just so. And see what has happened within less than a month. He took the stand and declared Hannigan insane. Within two weeks, so remarkable was recovery, the Commission was asked to discharge the man. Yet how could it do so in the face of the testimony so recently given. The courts were appealed to.

Judge Barnard refused to order the discharge of the prisoner from the State Hospital, and insisted that the indorsement of the State Lunacy Commission to the certificate of sanity given by the superintendent of the hospital is needed to make Hannigan's discharge legal.

He says that when a man is acquitted of the crime of murder on the ground of insanity, and then committed to an asylum, three processes are needed to secure his discharge—viz., first, the certificate of the superintendent of the asylum; second, the indorsement of the State Lunacy Commission; and, third, an inquiry by a Supreme Court Justice as to the man's sanity. He could not understand, he said, why the Lunacy Commission refused to indorse the certificates of Dr. Pilgrim. He remanded Hannigan back to the asylum.

Immediately after Judge Barnard declined to discharge Hannigan from the hospital his lawyers went to Newburg. There they found Justice Brown, and renewed their application for a writ of habeas corpus for their client. Judge Brown signed the writ. He was unwilling, however, to hear arguments on the case that day, though the officials of the hospital had taken Hannigan to Newburg immediately.

The Commission was appointed to save the taxpayers of the State, not to furnish means for useless expenditures. The detention of the superintendent, the various keepers and attachés in attendance at court—first in Poughkeepsie, then to Newburg—was a waste of public moneys and a perversion of principles. The Legislature should speedily amend this section, for what was a few days ago only a theory, to-day becomes a burning shame.

WHICH DOES IT ADVERTISE?

THE above question is irresistibly suggested by a glance through a bulky pamphlet recently issued in Chicago by the manufacturer of one of the many concentrated foods which glut the market. It is the stale and familiar compound of "original research," reports by the hired chemist of the firm or by similarly "influenced M.D.'s," who usually sign themselves as third or fourth assistants to some distinguished hospital or clinic, with testimonials from various physicians and "professors," deftly interspersed with insinuating and laudatory remarks by the head-salesman. All of which has the impudence to call itself "scientific matter," and claim to be latest views upon the problems of nutrition, "condensed for the benefit of the busy practitioner," who is expected to be duly grateful therefor. And the agents who distribute these actually assume the airs of benefactors and enlighteners of a poor, benighted profession. A very brief inspection of this particular hodge-podge, however, reveals the fact that, like a "double" Uncle Tom's Cabin, it exploits "two Topsies," and that the burden of its song seems to be divided between "the product" and its "developer," a certain doctor of our own city (to our shame be it said) whose name and titles adorn its columns in reckless profusion, occurring ten times in the first twenty pages. This apotheosis begins in the introductory chapter, where he is hailed as the genius who developed new methods of application . . . . of this power" . . . . "up to the marvellous scope and efficacy now exhibited by his reports, which *make up the marrow* of these pages." Not

the marrow merely, but the periosteum also and part of the Haversian systems, for his name appears at the foot of articles, at the head of them, in the middle of case-reports, and even in the ignominious ruck of testimonials from the wilds of Arkansas and the cross-roads of "Injianny." In fact, it seems to be a contest between the Doctor and the food, with the odds in favor of the Doctor; for while he achieves the proud literary feat of mentioning the food by name *eight* times in a single page of "contribution," yet it gets only a plain capital, while his name looms up majestically in double capitals, with its titles trailing behind it like the lurid tail of a comet, clear across the page. This is by no means the first time that a physician has endeavored to waft himself into prominence on the wings of a proprietary remedy, but it is such a glaring and disgusting instance of the offence that it merits special mention. Its very grossness, however, defeats itself, for it is so palpably overdone that it raises the question, Who pays for the advertisement, the manufacturers or the Doctor?

Another amusingly impudent feature of this pamphlet is the insertion of the names of distinguished clinicians, in staring capitals in the middle of pages loaded with resounding praises of the aforementioned food, which names, however, on careful inspection, are found to be simply appended to some trite commonplace as to the value of nutrition, the uses of proteids, etc., with no reference to the food whatever. It reminds one decidedly of the late Artemus Ward's lecture-prospectus, which read somewhat as follows:

"MR. WARD HAS DELIVERED THESE LECTURES BEFORE ALL THE CROWNED HEADS OF EUROPE ever thought of delivering lectures."

OUR CHANGE OF HEART.

THE *Medical Record*, in commenting upon our removal to New York, interprets it as evincing "a sudden change of heart." We beg to submit that this is not a sudden change of heart, but simply a change of base.

To hold the affections subordinate to the reason is recognized as a safe rule of conduct, and it is in obedience to this that this Journal, after a careful consideration of all the factors in the situation, finds itself irresistibly drawn to New York. We are far from admitting, however, that the kindly consideration of our esteemed contemporary may not draw our affections after us, and lead us to experience the realization of the old saying, that where our friends are there will our heart be also.

ECHOES AND NEWS.

CORNELL girls have successfully withstood two sessions of vivisection without any marked increase in hysterics or nervous diseases. All students at Cornell are required to dissect during a part of their freshman or sophomore year.

THE foundlings of New York hereafter will be sent directly to Bellevue Hospital. It has been learned that under the present rule, whereby such waifs are first taken to Police Headquarters, at least eighty per cent. die of exposure and hunger.

THE pre-trial system, so extensively used by the governments of Germany and France, has been advocated by the chief expert to the New York City District Attorney's office, and its workings are being carefully watched in a series of cases. There will, under the new system, be no convictions of insane men, and fewer sane men will be able to escape on the plea of insanity.

A SPECIAL MEETING OF THE NEW YORK ACADEMY OF MEDICINE was called on the 27th ultimo to consider resolutions of censure for the Commissioners of Charities and Correction in their recent action in placing the appointment of physicians and surgeons to the various hospitals in the hands of the three principal medical colleges, together with the fourth division of Bellevue Hospital.

After a prolonged discussion the resolutions were *not* sustained, the vote standing 47 to 108.

THE danger of blood-poisoning in piercing the ear is not to be ignored because the operation is supposedly not a dangerous one. There is nothing right about this home surgery. The cleanest person, when it comes to a surgical operation, is, without proper scientific laving, medically unclean. A woman takes a needle, any needle, and threads it with any thread. This thread may have been in her work-basket months and months, lying next to other spools of all colors. She would not think of washing her own hands or washing the ear to be pierced. A cork is taken out of some bottle, any bottle, without thought as to what is in the bottle or how long the cork has been exposed to the dust. This cork is placed under the lobe of the ear for the needle to strike against when it comes through. Inflammation and suppuration naturally result.

IT is reported that Dr. Cæsar Lombroso has just been convicted in a French court of gross plagiarism, and condemned to pay the man out of whose book he stole the sum of 2500 francs. The plaintiff, M. Crepieux-Jamin, found in *La Grafologia*, a work by Lombroso, published at Milan, passage after passage which were simply translated from a book by M. Jamin, to whom no credit was given, and whose name was not once mentioned by this soi-disant criminologist. He brought suit at Rouen under the International Convention adopted at Berne, in 1844, and won a verdict without difficulty, the evidence being indubitable. A tendency toward plagiarism, we have been told by both Lombroso and Nordau, is a sign

of degeneration. Doubtless it is—degeneration of the conscience.

There will be held at Washington, D. C., on February 10, 1896, a competitive examination of candidates for appointment to the position of Assistant Surgeon in the U. S. Marine-Hospital Service. Candidates are required to be not less than twenty-one or over thirty years of age. They must be graduates of a reputable medical college, and furnish testimonials as to character.

Successful candidates, having made the required grade, are appointed in order of merit as vacancies arise during the succeeding year. There is at present one vacancy.

A successful candidate when recommended for appointment is commissioned by the President of the United States as an Assistant Surgeon. After four years of service, and a second examination, he is entitled to promotion to the grade of Passed Assistant Surgeon, and to the rank of Surgeon, according to priority, on the occurrence of vacancies in that grade.

The salary of an Assistant Surgeon is $1600 per annum, together with furnished quarters, light, and fuel; that of a Passed Assistant Surgeon $1800 per annum; and that of Surgeon $2500 per annum. In addition to the above salaries, after five years' service, an additional compensation of ten per cent. of the annual salary for each five years of service is allowed medical officers above the rank of Assistant Surgeons, the maximum rate, however, not to exceed forty per cent.

When an officer is on duty at a station where there are no quarters furnished by the government commutation of quarters is allowed at the rate of $30 per month for an Assistant Surgeon, $40 for a Passed Assistant Surgeon, and $50 for a Surgeon. The successful candidates after receiving appointments are usually ordered to one of the larger stations for training in their duties.

Full information may be obtained by addressing the Surgeon-General of the Marine-Hospital Service, Washington, D. C.

The Remedies of Animals. From the earliest ages animals have been credited with a considerable knowledge of the medical properties of plants. Legund relates that Esculapius cured a patient by using an herb which he had seen a sick goat search for and eat. In the Middle Ages systems of therapeutics (bestiaries) were founded upon reported animal practice, just as to-day the populace confide implicitly in the sovereign virtues of Indian "blood-medicines," and Chinese, negro, or gypsy "roots" or "herbs." A writer in the London *Spectator* gives a most elaborate and interesting list of the remedies reported to be used by animals for either the cure or prevention of disease. Grouse, for instance, during an epidemic of bird-plague, have been known to fly down to the seashore and eat the salt-crystal evaporated upon the rocks. Pheasants scratch up and eat the roots of the wild arum, which are so pungent as to blister the tongue, and also the colchicum-root, presumably as aromatic digestives; at all events pepper and other spices must be added to their food when domesticated. Quite a variety of substances are eaten apparently mainly for their mechanical effect as emetics and purgatives by the carnivora. This is the rationale of the familiar use of grass by dogs and cats, also by lions, tigers, and leopards, and of ashes or dirt by dogs fed largely from dishes or upon cooked foods. Our author also adduces the fondness of ruminants for salt and of birds for grit and gravel as cases in point, but these come distinctly under the head of diet and normal aids to gizzard-digestion. The same sort of objection applies to the great variety of water, dust, and mud-baths given by him, though, so far as the last two are directed against parasites, they may be regarded as remedies.

Indeed, the impression decidedly given by a careful study of the whole list is that the actual amount of really "medical" knowledge possessed by birds and animals is very slight, as would naturally be expected in view of the absence of any form of language adequate to transmit the knowledge of one generation to the next. Disease is such an infrequent and irregular factor in animal welfare, leaves such comparatively slight permanent imprints upon either mind or body when mild, and none at all, of course, when fatal, and is so very seldom inherited, that it is hard to imagine how "remedial" instincts of any sort could well be transmitted, while the amount of therapeutic knowledge directly acquired during the brief lifetime of an individual must be very limited. Speech is absolutely necessary for the transmission of any but the most rudimentary forms of knowledge. In the realm of surgery and external applications birds and animals make a somewhat better showing, because parasites and wounds or other injuries play a much more frequent and constant part in their experience, and hence some rude idea of their treatment can both be acquired by the individual and transmitted so as to be acted upon by natural selection.

And yet even here it seems to be largely a process of using the first application that comes to hand. Nearly all birds and animals use dust-baths or mud-baths of some sort to protect themselves against vermin, and some are said to exercise a choice between different sorts of mineral-laden earths. Sea-birds are said to seek fresh water to bathe in. The dog in particular and carnivora in general cleanse and soften their wounds by licking until a sort of plaster forms over them, composed of saliva, hair, and dust. The elephant blows dust from his trunk over his surface-wounds, or covers them with mud, and even plasters up bullet-wounds with the same materials. He will also cover his sun-scorched back with cool green leaves. Tradition declares that the pig is the original inventor of the mud-bath—which seems tolerably obvious—and that several of the mineral-springs of Europe were discovered by the swine-herds whose pigs resorted to them for the cure of skin eruptions or diseases. The famous waters of Bath are said to have been brought to human notice in this way by the swine of Prince Bladud. Nowadays such things are done by syndicates—which is much better. In fact, animal medicine and surgery are at best extremely primitive and blunted, and most of widespread popular beliefs to the contrary are either superstitions or due to misunderstandings. The fondness of cats for catnip, for instance, is solely due to the similarity of its odor to the feline genital secretions. The mongoose does not depend on an herb to cure him of cobra-bite, but upon his extraordinary agility and skill in avoiding the snake's stroke, and most such "cure" and "antidote" stories have little better foundation.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, December 19, 1895.

JOSEPH D. BRYANT, M.D., PRESIDENT.

VAGINAL VERSUS ABDOMINAL SECTION IN DISEASES OF THE FEMALE PELVIC ORGANS.

DR. W. M. POLK read a paper with this title. (See page 2.)

DISCUSSION.

DR. E. W. CUSHING, of Boston, opened the discussion. He said that there could be no longer any doubt in the minds of those who had studied the evolution of vaginal hysterectomy that the resources of our art had been wonderfully increased by the introduction of morcellation of the uterus, and it was very significant that in the face of opposition the method had steadily increased in popularity, until now it numbered among its advocates some of those who at first had most bitterly opposed it. There were still many, however, who believed with an eminent surgeon in this country that vaginal hysterectomy for pus-tubes was "blind, ignorant, and cowardly." The question at the present time was really between total abdominal and total vaginal removal of the uterus and appendages. By splitting the uterus in half the organ could be brought down much further, and by successively dividing these halves it could be made to descend gradually and rotate anteriorly, thus bringing into view any adhesions that might exist. Clamps were applied to the vessels of the broad ligament under the guidance of both sight and touch. By this method of operating the uterus could be safely and quickly extirpated, even when bound down by firm adhesions, and fibroids up to the size of a cocoanut could be removed with far less shock than by abdominal section. The simplicity of this method and its comparative freedom from danger could hardly be believed by one who had not had the opportunity of seeing it done by an expert. If the tubes are full of pus, they may be opened and washed out without soiling the peritoneal cavity. Want of space between the ischia and a tumor over five inches in diameter are serious contraindications to the vaginal operation, and where there are many adhesions to the intestine one not thoroughly familiar with the vaginal route should not attempt to operate by this method. It was generally accepted, the speaker said, that the vaginal operation was best in the severest cases—those in which there are large purulent accumulations from tubo-ovarian abscesses, or from suppurating hæmatocele where the pus is roofed in by dense adhesions of bowel and omentum. When it is not certain that both appendages are involved the vaginal vault can be opened behind, or, still better, anteriorly, and the question of the removal of the appendages determined by inspection. The advantages of the vaginal operation were diminution of shock, freedom from abdominal wound and scar, and from the liability to hernia.

DR. CUSHING then projected on a screen a large number of photographs taken during a vaginal operation, and exhibiting the various steps in the technique, as well as the facility with which the uterus and associated tumors could be brought into view and carefully examined.

DR. W. T. LUSK said that it was particularly interesting to hear from Dr. Polk on this subject, as he had been the pioneer in this work in this city. When it had been proposed in Brussels, in 1892, to substitute the vaginal route for the abdominal method in doing much of our work, the speaker said that he had received the suggestion with impatience, but his attention had been called to the method by the great rapidity of convalescence of patients operated upon by the vaginal route, and he had at last become a convert to the vaginal operation. The capabilities of the method had been strikingly demonstrated to him by a personal observation of the work of such surgeons as Péan, Pozzi, Ségond, and Jacobs. Notwithstanding the length of time required for the removal of fibroids by the vaginal route by morcellation, it was worthy of note that the operation had scarcely an appreciable effect on the patient. In cases of double pyosalpinx, in which the uterus was removed first and the tubes afterward, the vaginal method was certainly safer than the abdominal. He had hesitated longest about employing the vaginal route in cases in which it was desired to do conservative surgery on the appendages, and he still thought that the abdominal route was the better for this class of cases except where a free anterior incision was employed. By the latter procedure it was usually possible, if the tubes were not greatly enlarged, to detach the tubes, and bring out first one cornu, then the fundus, then the other cornu, and lastly the tubes. There was no more shock attendant upon this procedure than followed ordinarily an amputation of the cervix. On its merits alone, he would say that the vaginal operation was the coming method, but there was another reason, and that was that the women were beginning to insist that they should be operated upon in this way. In closing, the speaker cautioned those who wished to change to the vaginal method to go slowly, and select for a trial of this method only the simpler cases. He felt sure that these vaginal operations would be followed by much less discomfort to the patient.

DR. J. M. BALDY, of Philadelphia, said that he believed he was almost alone here in opposing the vaginal operation. He had no quarrel with the beauties of the vaginal method, nor did he question many of the advantages and results, but he felt that the two routes had not been compared with sufficient care. He was positive that there was as little shock after the abdominal operation as after the vaginal operation, and also that the peritoneal cavity was opened almost as frequently by the vaginal route. He also contended that it was infinitely more reliable to operate through the abdomen with the patient in the Trendelenburg position than to operate by the vaginal route, because in the former one had the aid of both sight and touch, and was in a much better position to determine whether an operation should proceed further or terminate as an exploratory incision. In comparing the two methods of operating, great stress was laid upon the very slight degree of shock observed after the vaginal operation; but in his experience shock was not a great element in pelvic surgery. To be sure, the pulse often became weak after the operation, but this was usually due to the withdrawal of the ether. Another common argument of the advocates of the

vaginal operation was that hernia was avoided. Hernia after abdominal operations was now comparatively rare and was perfectly amenable to proper and timely treatment; moreover, a number of cases of hernia following vaginal hernia had already been reported. Any surgeon would agree with him that a vaginal hernia was much more difficult to treat than an abdominal hernia. The bright side of the vaginal method had been very ably presented, but nothing had been said about the alarming proportion of fistulæ following this operation. Most operators by the vaginal route had included fifteen or twenty cases of fistulæ in their lists of these oprations, and many of them had spoken of the difficulty of curing them. Sometimes an abdominal operation was demanded for the relief of this serious complication of the vaginal operation. Injury to the ureters was not at all uncommon, and by the vaginal method the operator was ignorant of the existence of the complication. Three times in his own experience he had injured the ureters in abdominal operations and only discovered it just in time to rectify the difficulty.

One of the great objections to the vaginal method was the incompleteness of the operations. He had never seen a vaginal hysterectomist do a complete operation. As an expert operator required nearly twice the time to operate by the vaginal route as by the abdomen, this prolongation of the etherization was a matter for serious consideration. Nor could he accept the statement so persistently made, that convalescence was much quicker after the vaginal operation. The abdominal operator believed that his patient was better off in bed for four weeks after the operation, irrespective of her recovery surgically; the vaginal hysterectomist allowed his patient up as soon as she was surgically well. After considering all these arguments, and duly weighing them, he was free to confess that in his opinion the balance was in favor of the abdominal operation, sentiment not considered.

DR. E. B. CRAGIN said that the first vaginal cœliotomy he had ever seen had been done by Dr. Polk, and the more he saw of vaginal work the better was he pleased with it. All surgeons must have noticed a certain depression of the patient after abdominal operations, and without stopping to consider whether or not this was shock, he would say, further, that all must have noticed also that this depression was not so great after the vaginal operation. He could not agree with Dr. Baldy in excluding from the cases suitable for vaginal operation large pelvic intraperitoneal abscesses. These were exactly the cases in which the vaginal operation showed its superiority.

Since March 2, 1895, he had performed 55 vaginal cœliotomies, of which 42 were for diseased appendages. According to his experience, therefore, about 75 per cent. of cases of diseased appendages were suitable for the vaginal operation, and the remainder for the abdominal operation. He believed that there was more danger of injuring the rectum in the vaginal operation, yet, as Dr. Baldy had said, the ureters were likely to be injured in abdominal operations. He believed that the vaginal operation gave better results, both immediate and remote, and that vaginal hysterectomy was an operation that had a future.

DR. CHARLES P. NOBLE, of Philadelphia, said that the arguments in favor of the vaginal route had been presented, but everything had been stated in very general terms. He would like to ask Dr. Polk and Dr. Cushing how many vaginal operations they had done, how many deaths they had had, and how many fistulæ they had met with.

DR. POLK replied that his mortality had been 3 in 72, and the fistulæ 2 in 73.

DR. CUSHING said that he had had about 75 vaginal hysterectomies, with 5 deaths; and of this number there had been 2 urethral fistulæ and 1 fistula of the bladder, all of which had been cured. In a recent series of cases there had been 20 vaginal operations, with 1 death. All his operations had been complete.

DR. NOBLE said that in comparing the two methods of operating one should consider the mortality, the morbidity, the sequelæ, the mode of convalescence, and the ability to deal with complications. The mortality was very low by both methods, although it was somewhat less by the abdominal method. It depended chiefly upon the operator. The morbidity after abdominal operations was not more than 5 per cent. in his experience. Adhesions occur with both methods. Most operators reported about 10 per cent. of incomplete vaginal operations, which should be contrasted with the small number of infected pedicles in the abdominal method. He thought that there was but little doubt about bowel and bladder fistulæ being more frequent after the vaginal operation. His own cases of vaginal hysterectomy had been in hospital as long as the abdominal hysterectomies; in fact, he thought convalescence was more rapid after the abdominal operation. By the abdominal route, in his opinion, it was far easier to cope with complications arising during the operation, and also to control the hemorrhage. The use of clamps to arrest hemorrhage was at best very crude surgery. As he had recently reported 200 cases in which the abdominal wall had been united with buried silkworm-gut sutures for the relief of hernia, and without a single relapse, the argument that the abdominal operation should be avoided because of the frequency with which it was followed by hernia should have but little force.

Where the facilities in a hospital for securing asepsis were poor he would prefer to operate from below. He was prepared to believe that by anterior colpotomy one could remove small fibroids, but for larger tumors he would greatly prefer abdominal section to the vaginal operation with morcellation. He would likewise prefer the abdominal route in dealing with tubal pregnancy, except in the few cases in which there was a suppurating hæmatocele. The operation from below was likely to result in the unnecessary sacrifice of ovaries in this class of cases.

He did not wish it to be understood that he was opposed to all operating through the vagina, but he would reserve this method for cases of large pelvic abscess, and where the women were very fat.

DR. H. J. BOLDT said that his conclusions regarding the comparative advantages of the two methods had been formulated only after a large experience with both abdominal and vaginal operations. The vaginal operation was applicable to tumors of considerable size, provided the neoplasms were movable, to cases of tubal pregnancy before rupture, or after rupture and cessation of hemorrhage, and to fibroids which did not extend more than three or four fingers above the symphysis.

The submucous and interstitial fibroids were most successfully treated in this way. For other fibroids, and for neoplasms in virgins, he considered abdominal hysterectomy preferable. It was quite possible to do a complete operation in nearly every case by patient and careful work. The risk of injuring ureters and bowel was about the same in the two methods. He had never seen a vaginal hernia. While admitting the possibilities of the vaginal method, he felt that a more satisfactory diagnosis could be made by a free abdominal incision.

DR. H. N. VINEBERG said that he was among the first to introduce the operation of vaginal incision, which was the forerunner of vaginal section in conservative surgery. He had reported several cases last March. His experience was entirely opposed to the view that the tubes and ovaries could be resected more satisfactorily by the abdominal route. The vaginal operation was particularly appropriate to these cases, because they were often associated with retroversion, a condition which could be readily relieved at the same time by sewing the uterus to the vaginal wall. He could not see that Alexander's operation offered any special advantages over anterior vaginal fixation.

DR. PAUL F. MUNDÉ said that the discussion thus far was calculated to convey the impression that all the New York surgeons had been converted to the vaginal procedure, which was far from the truth. He had extirpated the uterus per vaginam for cancer 27 times with 24 recoveries, but as he had secured just as good results, and more easily, by the suprapubic route, he would not care to employ the vaginal method in these cases hereafter. There was certainly no more shock following the abdominal section. As was well known, he was not given to operating frequently on fibroids, but out of the 33 abdominal hysterectomies that he had performed for this condition, 4 had died. The abdominal operation was certainly easier than the vaginal. He had long maintained, and in the face of much opposition, that all fluid accumulations were best operated upon through the vagina, and he was glad that this method now had an increasing number of advocates. He would limit the vaginal operation to cases of pelvic abscesses in which the vagina was roomy and the sacs could be drained or enucleated.

DR. E. E. TULL exhibited a specimen to demonstrate the completeness of the vaginal operation. He had done 50 operations of this kind with 2 deaths. These deaths were due to purely accidental causes. He could not understand why some surgeons used so many clamps and ligatures. He had recently removed a tumor weighing ten pounds, and in this operation had used only one clamp and two ligatures.

DR. W. GILL WYLIE said that although he had done about 1500 abdominal sections he had resorted to the vaginal route only 100 times. Out of these 100 vaginal hysterectomies there had been only one fatal case, and he attributed his excellent results largely to the fact that these vaginal operations had been done in a favorable class of cases. The abdominal method was assuredly the one admitting of more general application, and if the great surgeons of France had been as expert in abdominal surgery as the American and German surgeons he was of the opinion that the vaginal method would not have been so strenuously advocated.

DR. POLK, in closing the discussion, said that there seemed to be a general agreement regarding the greater simplicity of the abdominal route, and although it was a general rule that the easier the operation the better the work done, this proposition did not hold good if in attaining this ease of operation it was necessary to do violence to important structures. The peritoneal cavity was just as likely to be opened in the one method as in the other. When the time consumed in suturing the abdomen was considered, it was evident also that there was no very great difference in the time occupied by the two operations in a given case. He had made no mention of cancer in his paper because he was not decided as to which operation was the better one. He was inclined to think, however, that we were justified now in performing abdominal section, and in adding to the old Freund operation the removal of the broad ligament and of infected glands.

It so happened that those who had participated in this discussion had not grasped what he considered the great underlying principle, viz., that peritonitis usually originates in the lower part of the pelvis in close relation with the vagina, and that by early incision into this structure it was possible, with little or no risk to the patient, to cut short diseased processes and save important structures in the pelvis. Having once adopted this practice of early operative interference by the vaginal route, he felt confident that all the objections that had proved such stumbling-blocks in this discussion would be forever wiped away.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting December 3, 1895.

EDWARD D. FISHER, M.D., PRESIDENT, IN THE CHAIR.

GRAVES'S DISEASE—ŒDEMA OF THE EYELIDS.

DR. J. ARTHUR BOOTH presented a case of Graves's disease with the presence of a rather rare symptom—œdema of the eyelids. On inspection the diagnosis of Graves's disease had been made, but the examination had revealed no exophthalmos. There was, however, slight enlargement of the thyroid and a rapid pulse. The patient, a girl, aged seventeen years, was very much frightened when quite young. She had some convulsions following this incident. About the time of her first menstruation œdema of the eyelids first appeared. She now complained of palpitation of the heart, profuse sweating, headache, and general weakness. This œdema, the speaker said, was not a true œdema, as it did not "pit" on pressure. The movements of the lids were harmonious. On palpation swelling and diffused hardness of the thyroid could be made out. When seen about one month later, *i. e.*, December 2d, there was apparently a slight prominence of one eyeball. Four examinations of the urine had been made, but nothing abnormal discovered.

CEREBRO-SPINAL SYPHILIS.

DR. CHRISTIAN HERTER presented a young man, aged twenty-eight years, who gave a history of having had a chancre two years ago, and about one year thereafter developing various cerebral symptoms. The vision was first observed to become diminished in the right eye; then there was ptosis on that side, paralysis

of the third nerve, paralysis of the facial nerve and of both trigeminal nerves. After this he developed weakness in certain muscles of the right arm. There was a history of rheumatism in the parents, and of alcoholism in the patient. About one year ago there was a purulent discharge from the left ear, which lasted for several months. One year ago the right eye was struck by a piece of hoop from a barrel. Shortly afterward he began to complain of double vision, and saliva drivelled from the right angle of the mouth. There had been at no time pain in the hand or forearm. Under the administration of iodide the patient had regained some control of the movement of the eye-muscles and right eyelid. The physical examination, on November 26, 1895, showed the man to be small and fairly nourished, with lateral curvature of the spine, and considerable deformity of the thorax. There was slight ptosis on the right side. The right internal rectus was extremely weak, and there was paresis of the superior and inferior recti. There was sufficient power in the internal rectus to maintain binocular vision, but not sufficient to preserve convergence. The reaction to accommodation was greatly impaired. R. V. was 20/50, and L. V. 20/40. Both optic disks were found to be distinctly paler than normal, and the vessels slightly narrowed. Near the right disk were two patches of slight choroidal atrophy. All the movements of the face were well performed, and there was no drivelling of saliva. Reaction of the facial muscles to faradism was well preserved. The temperature-sense and tactile-sense presented fairly well-defined areas. Sensation was preserved over the eyelids, and was only moderately impaired over the nose. Near the lips sensations of pain and touch were slightly impaired. The uvula deviated to the left. The sense of taste did not seem to be distinctly impaired. There was some loss of power in both arms, but this was more marked on the right side. The flexors of the right wrist were weak, and those of the fingers were wholly paralyzed. The power of the pronators and supinators was normal. All the paretic and paralyzed muscles were wasted. All the paralyzed muscles showed the reaction of degeneration to a greater or less degree. The ulnar area of the right hand and lower two-thirds of the forearm showed loss of sensibility to pain, temperature, and touch. In the left hand and forearms there was a moderate loss of power in the flexors of the fingers. There was no wasting of the left forearm or any change in sensibility or electrical reaction. In both arms there was slight and rather coarse tremor when the arms were extended. There was no loss of power in the legs, and sensibility was not impaired. Both knee-jerks were absent, but the plantar and cremasteric reflexes were present. There was considerable oscillation on standing with the feet together and the eyes closed. The patient urinated without straining. There was frequent pain in the right hypogastric region, but no "girdle" pain. There had evidently been marked improvement during the past month under the use of iodide. The conditions present in this patient were undoubtedly due to the lesions of cerebro-spinal syphilis. The fifth nerve had been more damaged than the others.

The speaker said that the two points upon which he desired further information were: (1) The exact location of the lesions at the base; and (2) as to whether or not the patient has locomotor ataxia.

DR. W. M. LESZYNSKY said that he recalled having seen a man, aged about fifty-eight years, with very marked exophthalmos and goitre, associated with marked œdema of the eyelids. This œdema, however, had been absent in one eyelid for a time, and it had gradually disappeared.

DR. B. SACHS said that within the last few years he had seen upward of thirty cases of Basedow's disease, and yet he had never observed such œdema in any of these cases.

DR. J. ARTHUR BOOTH said that he had been unable to find any mention of more than one case of the kind in English literature. It was interesting that no exophthalmos had been noticed until a few weeks ago. It had been suggested that the œdema was due to paralysis of the orbicularis.

DR. SACHS said that he agreed to the diagnosis of cerebro-spinal syphilis in Dr. Herter's case, but would prefer to have it called *multiple* cerebro-spinal syphilis. The involvement of a large number of cranial nerves and imperfect involvement of some of these nerves were especially characteristic features. He had made the diagnosis of cerebro-spinal syphilis several years ago in a case in which there had been complete trophic paralysis of the upper and lower extremities, with ptosis. One critic had looked upon this case as one of neuritis rather than of central disturbance. This view he did not accept, for we had only to suppose that the specific meningitis had extended along the ventral surface of the cord instead of laterally to explain the symptoms. The fact that there had been improvement in some of the symptoms under the use of iodide was, of course, very significant. In his opinion there was no one symptom of greater value than the complete immobility of the pupil to accommodation and light, or the equal impairment of both of these functions. This was very different from the Argyll-Robertson pupil. If in addition to this there was a multiplicity of lesions, the probability of syphilis was very strong. He would not think of making the diagnosis of tabes in this case, because there was absence of the Argyll-Robertson pupil, little or no pain, and no involvement of the bladder.

DR. HIRSCH said that he did not think we could exclude general paresis of syphilitic character. The expression of the face, the tremor, and slight deviation of the tongue, all pointed toward this condition, and the diagnosis could not be made without further knowledge of the psychical symptoms.

DR. HERTER said that from his short acquaintance with the patient he felt that the psychical symptoms usually observed in general paresis were not present. His mental condition and memory were quite good, and his slight imperfection in articulation seemed to be due to an imperfect co-ordination of the lower speech-mechanism. The expression of the face appeared to be due to the ptosis.

THE PRESIDENT said that he would certainly agree with the diagnosis of cerebro-spinal syphilis, and also regarding the points of localization at the base of the brain.

DR. IRA VAN GIESON said that he wished to indorse the term "multiple" cerebro-spinal syphilis from a pathological standpoint. Syphilis of the nervous system should be considered in three forms: (1) The multiple variety appearing in the form of plaques; (2) the form

in which there were discrete gummata; and (3) the form in which there were less tangible lesions of the blood-vessels and interference with the nutrition of the blood-vessels.

DR. SACHS said that through recent researches the end-arteritis of the spinal cord had been very definitely established. The specific endarteritis of the cerebral vessels had been recognized for a long time, but more recently it had been very definitely established in some of the cases of spinal syphilis that there was a specific endarteritis of the vessels of the spinal cord with areas of softening in the cord. The speaker said that a few years ago he had been inclined to consider these cases as examples of meningeal infiltration, extending in gradually through the entire cross-section of the cord.

THE PRESIDENT said that most of the symptoms of general paresis were of later origin than those present in the case under discussion. This patient had already shown improvement, therefore the symptoms must be due to specific infiltration at the base of the brain, and also possibly to softening in the cord from an endarteritis —a condition shown to exist many years ago. This was essentially different from the chronic condition present in general paresis.

DR. A. WIENER presented a

REPORT UPON A CASE OF PROGRESSIVE MUSCULAR DYSTROPHY,

with the idea of showing that such a case could be improved by treatment. From a review of the literature, he said that it was apparent that the tendency now was to bring the disease formerly divided into spinal and myopathic forms under one head. The patient to be presented this evening, he said, had been exhibited two years ago before this Society. At that time he was twenty years old, and had been perfectly healthy up to May, 1892, and had not experienced the slightest difficulty in performing any muscular movement. The first indication of difficulty was in May, 1892, when he began to suffer from vague pains in the region of the spleen and liver on considerable muscular exertion. Shortly after this, difficulty in going up stairs and walking was observed, and soon atrophy of the lower extremities and back followed. Finally, the muscles of the neck and face became involved. The patient denied alcoholism or syphilis, and stated that his health had been excellent. He had noticed while engaged in athletic sports that the muscles of the upper extremities quickly became fatigued. In 1893 there was no distinct abnormality about the formation of the skull. His general appearance was that of a person very much emaciated, and there was great difficulty in walking and lifting the limbs. On attempting to stand upright he exhibited a marked lordosis. When lying down it was impossible for him to turn over. The muscles were soft and covered with redundant skin. No vasomotor or trophic disturbances were discovered. The deep reflexes were absent on both sides. The spinal column was in no way tender on percussion. Examination of the muscles showed a marked paresis. The muscles of the forearm and hand appeared normal. Mechanical excitability was very much diminished. Electrical examination gave quantitative changes, but no reaction of degeneration. The abdominal muscles were only slightly affected. The orbicularis oris and palpebrarum were the ones chiefly affected about the face. The deltoid muscle showed simple atrophy of the muscular fibres, with cell-infiltration in the muscle and between the fibres. No hypertrophy of the fibres could be found, and there was no evidence of fatty deposit. The small bloodvessels were filled with blood, and the walls with round cells. The lack of all sensory disturbances left no doubt that this was a case of the myopathic type. No improvement was noticed under the usual tonics and electrical treatment, so it was decided to try the effect on physical culture carried on daily to the point of exhaustion. From half an hour to one hour was devoted to exercises with dumb-bells, Indian clubs, and the use of a health-lift machine. There was evidence of a very marked improvement in every way. Quite lately he had been able to ride forty miles in one day on a bicycle. Some of the muscles still showed atrophy. The improvement was especially marked in the muscular movements and in the partial return of the contour of the parts. The speaker said he did not think such treatment would be efficacious in cases developing in infancy, but where there had been a good development prior to the appearance of the disease this plan of treatment offered a good prospect of success.

DR. G. M. HAMMOND said that the heart-symptoms in this man were very much like those seen in individuals who had received too much physical exercise at a time when the heart was feeble. This man's heart was dilated and hypertrophied, and it was possible that this was due to a loss of muscular tissue as a part of his disease. He asked if Dr. Wiener thought the arrest of the atrophy might not have been spontaneous and independent of the physical exercise. He had himself seen one or two less extensive cases of dystrophy in which the atrophy was recovered from without any treatment. In one of these cases the atrophy was limited to the muscles of the thumb in both hands.

DR. C. L. DANA said that he thought there was a class of cases of progressive muscular dystrophy brought on by excessive muscular work when the person was immature. This form of dystrophy seemed to him to have a different course from the ordinary types of dystrophies. He had seen cases in which he believed the lesion was in the muscles, and in which the course and clinical symptoms were those of dystrophies occurring in acrobats and gymnasts. In these cases the symptoms usually progressed steadily up to a certain point, and then there was an arrest of the process, and sometimes a very decided improvement. This clinical distinction should be borne in mind in estimating the value of the treatment pursued in this case. He doubted very much if such treatment would have much effect on the more usual form of atrophies. In the cases to which he had referred the upper arm, shoulder, and back were usually affected.

DR. B. SACHS said that the case seemed to him of great importance. He was perfectly familiar with the class of cases referred to by the last speaker—the localized atrophies and those due to excessive muscular exercise. The case under discussion, however, did not belong to this category. When first presented to the Society, two years ago, the involvement of the facial muscles was a prominent feature, and the improvement observed had been in the muscles other than the facial ones. There was, of course, room for doubt as to the

value of this particular treatment, yet it should be remembered that no improvement had been observed under other methods, and yet was prompt and decided under physical exercise systematically carried out. The original diagnosis of progressive muscular dystrophy was without doubt correct, and the result of treatment was certainly unique.

DR. JOSEPH COLLINS said that where the proton was diseased it should be evident that no amount of mechanical treatment would be of service, but if the form of progressive muscular atrophy were acquired, then treatment, including exercise, should be of some advantage. He thought, therefore, the case was very instructive. It was begging the question to infer that the improvement was independent of the treatment. He believed this to be a case of progressive muscular dystrophy of the acquired type, no evidence having been brought forward to show that it was heredity, and that the improvement was due to the treatment.

DR. G. M. HAMMOND said that the man had been an athlete and a runner, and yet had developed the muscular dystrophy; hence he could not understand why if the muscular atrophy had developed during exercise, it should be arrested and improved by a resumption of systematic exercises.

DR. C. HERTER said that the case was evidently one of the familiar form of progressive muscular dystrophy, and he felt that the systematic exercise must have had a beneficial effect in bringing about this change. One should not, however, draw too positive conclusions from one or two cases. The case was a most interesting example of what could be done by modifying favorably the nutrition of a part.

The PRESIDENT said that as far as the distribution of the dystrophy was concerned we certainly found cases in which it was exactly similar, and yet we could not trace the exact etiological factor. Where the hereditary element was not present it was possible that there was a better chance for improvement under treatment. He thought that we were warranted in trying systematic physical exercise, at least in cases in which the hereditary factor was not especially prominent.

Dr. JOSEPH COLLINS presented a pathological specimen of

TUMOR OF THE MEDULLA,

with the following history: S. J. J., aged twenty-eight years, denied syphilis, and had been extremely temperate. The first symptom, numbness in the fingers of the left hand, was observed eight months ago. This gradually spread up the arm, and later on a similar feeling was noticed in the left lower extremity. About five months ago he became so unsteady that he had to give up his work as a bricklayer, but continued working in a factory till two months ago. About three weeks ago he observed a "stiff feeling" in the left side of the head, and the left upper and lower extremities felt unwieldy. On November 22d, when first seen by the speaker, at the request of Dr. Kelly, the head was fixed and slightly drawn to the left. There was no real stiffness of the head, and no abnormality or tenderness. There was no ocular paralysis; the pupils responded to light and accommodation. The fundus was found quite normal. Vision and color-perception were normal. The senses of smell and taste were normal. There was no unsteadiness of articulation. The knee-jerks were both exaggerated, particularly on the left side, and there was left-side ankle-clonus. The triceps reflex was exaggerated on the left side. The left hand was decidedly ataxic. The patient could walk, and could move the upper extremity in every direction. There was a remarkable diminution of the pain-sense all over the body, including the mucous membranes. Tactile sensation appeared to be unimpaired. Temperature-sense was exquisitely preserved. The patient talked rationally, and the psychical sphere was intact. Examination of the urine showed albumin, but no sugar. The pulse was rapid, the respirations accelerated, and the temperture 102° F. The opinion was expressed that the intracranial lesion could not be satisfactorily localized, but that there was probably a new formation within the brain, subcortically involving the pyramidal projection on the right side. Three days later the patient was seen again, and was found much worse. He was quite somnolent, and the reflexes had become quite sluggish. There was already marked pulmonary œdema. An exploratory opening was made by Dr. J. E. Kelly, the surgeon in attendance, just behind the fissure of Rolando. A hollow needle introduced into the brain in various directions found no unusual collection of fluid. On the second day after the operation his temperature rose to 105° F., although there was no evidence of sepsis in the wound. He died December 1st. It was found on autopsy that a great part of the medulla had been destroyed by the tumor, leaving only a mere shell. The remarkable feature of the case was that the man appeared to be well in every respect up to a short time before his death, and yet nearly all of his medulla was gone.

REVIEWS.

STUDENTS' AID IN OPHTHALMOLOGY. By GERTRUDE A. WALKER, A.B., M.D. 40 illustrations and colored plate. Philadelphia: P. Blakiston, Son & Co., 1895.

WE think that the excellences of this little work—and they are not few—hardly justify its existence or counterbalance its deficiencies. It is too small and scrappy to serve as a hand-book or guide for any student desiring thoroughness, and its obligations to a very limited circle of teachers, coupled with a decided myopia or limitation of the field of vision as to others, is too evident. What can be said of a text-book that conveniently avoids the whole subject of the treatment of heterophoria with these words: "Various forms of nervous disturbance can be traced to faulty muscular power, and complete relief from headache and symptoms of eyestrain is often not obtained until appropriately placed prisms are combined with the lenses which correct the patient's focal error?"

SPECTACLES AND EYEGLASSES. By R. J. PHILLIPS, M.D. Second edition, revised. Philadelphia: P. Blakiston, Son & Co., 1895.

WE are glad to see that a second edition of Dr. Phillips' excellent little manual has been called for by the profession.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE NATURE AND TREATMENT OF MAMMARY NEOPLASMS.[1]

BY W. P. CARR, M.D.,
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WE shall probably never arrive at anything like unanimity in our treatment of mammary neoplasms until we come to some definite understanding of their nature and morphological significance. And I believe that a too close following of microscopic appearances, and the attempt to classify each apparent variety as a distinct entity, have tended, and are tending, rather to lead us away from a true understanding of their real nature and consequent rational treatment.

We have divided tumors broadly into two classes, benign and malignant, and made many varieties or subdivisions of each class. Some of these varieties are generally conceded to be improperly named and classified; and there is much evidence, I may say even positive proof, to show that a given tumor may pass from one variety into another, or even from the one broad class of benign tumors to the other broad class of malignant growths.

I shall confine my remarks to some of the more common solid growths met with in the mammary gland, and endeavor to show the real similarity of structure in tumors that have been separately classified and that have at first sight markedly different anatomical characters. The most common tumor of the breast, the so-called adenoma, differs at first sight from the normal gland only in having a greater amount of connective tissue interposed between the glandular elements and in more or less irregularity in size and shape of these glandular elements.

But, as pointed out by Rannier, Virchow, and others, the vast majority of adenomata are really a growth of connective tissue into the tubular interspaces, and should properly be called fibrous, sarcomatous, or myxomatous tumors, in which the enclosed glandular elements are a secondary phenomenon.

Such a tumor is usually a true fibroma; but, if the infiltrating connective tissue be rapidly forming and rich in cells that have not had time to throw out fibrillary processes and become connective tissue, the growth would be properly classified as sarcoma. We cannot draw a sharp line between fibroma and sarcoma either clinically or with the microscope; nor can we always distinguish sarcoma from simple granulation-tissue the result of injury or inflammation. It seems clear, therefore, that the chief element of adenoma, adeno-sarcoma, adeno-fibroma, myxoma, and sarcoma is an infiltration of connective tissue more or less rich in cellular elements or mucilaginous material.

To go a step further, we may safely say that there are but two possible sources from which this infiltration of connective tissue may spring; and these are, first, the previously existing connective-tissue cells and, secondly, the leucocytes.

Two kinds of cells are found in connective tissue, the fixed cell and the wandering cell.

That fixed connective-tissue cells proliferate I very much doubt, but there is no reason to doubt the proliferation of the wandering cells, which are really leucocytes. However, be this as it may, we cannot question the fact that white blood-cells do, under a variety of circumstances, pass out of the bloodvessels and change into fixed connective-tissue cells. Nor can we doubt that much, if not all, of the new connective tissue formed at the site of various inflammations is derived from wandering leucocytes. The main function of some of the leucocytes seems to be that of changing into connective tissue for purposes of repair or for the walling up of some foreign body or deleterious substance. Granted then the infiltration of a tissue with leucocytes, we have the ancestor for our tumor. Let the fibrous mesh of the mammary gland become infiltrated with cells, as it invariably will under the influence of prolonged irritation; let these cells change into connective tissue, as they invariably will do under the same influence, and we have a tumor that will be fibrous or sarcomatous according to the slowness or rapidity of the process. We have only to find and *understand* the source of irritation to complete the etiology.

In order to make my propositions intelligible allow me to state some of the physiological processes known to occur in healthy tissues and in inflammations. We know that in the mammary gland we have a collection of gland-tubes surrounded and supported by a rather loose mesh of connective tissue richly supplied with bloodvessels and lymphatics. We know that normally there is a constant outpour-

[1] Read before the Medical Society of the District of Columbia, October 2, 1895.

ing of lymph or plasma from the vessels, and that this plasma flows between the meshes of the connective tissue, bathing and nourishing these cells and also those composing the gland-tubes, and finally finding its way into the lymphatics, to be returned to the bloodvessels. We know that the walls of the capillaries are provided with or can create small openings or stomata which allow white blood-cells to pass out in limited numbers and accompany the stream of plasma, while under ordinary circumstances the red corpuscles are unable to pass through these minute openings.

Let an irritant be applied, and the capillaries will become distended, plasma and cells pass out much more rapidly than in health, and the loose connective tissue becomes packed with cells and plasma. Stop the irritation, and the capillaries return to their normal condition, the infiltrating cells and plasma are carried off by the lymphatics, and the part returns to its normal condition. But let the irritation be continued long enough, and the infiltrating cells begin to change into connective tissue. They will continue to come out of the bloodvessels and form connective tissue as long as the irritation is continued. After a time indeed this newly formed tissue may act as a foreign body and become encapsulated. Whether or not the tumor will continue to grow depends perhaps upon several conditions, such as the continuation of the irritation, the resistance of the tissues, the completeness of the nervous control of the fixed cells of the tissue, and the amount of nutrition supplied. That fibrous and sarcomatous tumors have frequently originated at the seat of an injury cannot be denied, *nor can it be proven that most tumors have not been preceded by some inflammatory infiltration.*

There is much evidence to show that benign as well as malignant tumors usually occur in some tissue that has been the seat of such infiltration. I have myself seen four cases of what appeared to be a simple mammary abscess develop into a tumor. In one case into a carcinoma, in one into a rapidly fatal small round-celled sarcoma, and in two cases into fibromata or so-called adenomata that continued to grow and developed into large tumors. In fact, all inflammations that result in destruction of tissue or suppuration leave behind them a certain amount of fibrous infiltration enclosing gland-tubules that would present exactly the microscopic appearance of adeno-fibroma. I have in my possession a section showing this condition, taken from the breast of a woman who died of chronic parenchymatous nephritis soon after the healing of a mammary abscess. It cannot be distinguished from ordinary adenoma.

Keloid growths in scars are common. The frequency of occurrence of tumors in any organ is in proportion to the amount of exposure of that organ to inflammatory influences. Seventy per cent. of all tumors in women attack the reproductive organs, and it is safe to say that seventy per cent. of all prolonged inflammations are similarly situated. The mammary gland is peculiarly exposed to traumatic injuries, to bacterial invasions, and to prolonged and chronic irritation of a reflex character from the uterus. Its loose anatomical structure seems particularly favorable for tumor development and growth.

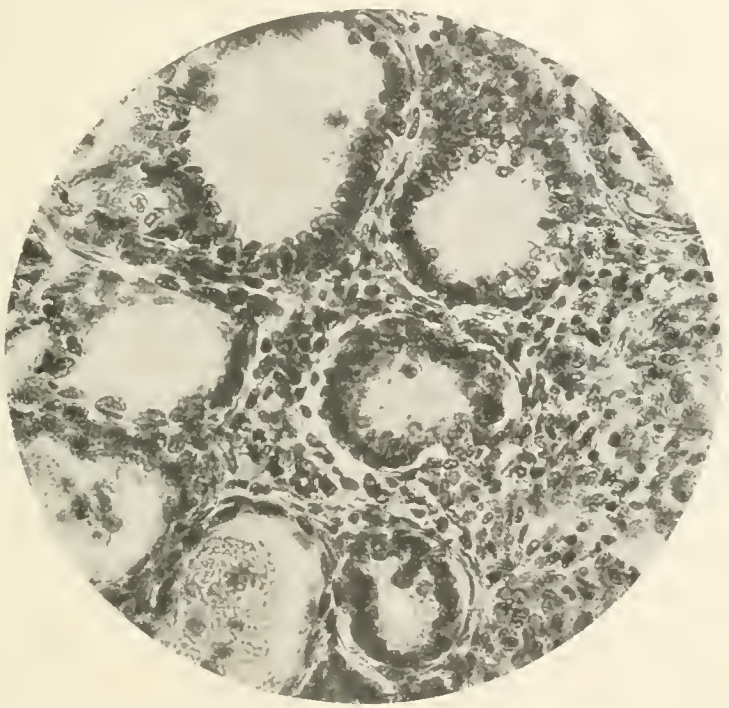
I am aware that these views are diametrically opposed to some recent and high authorities. Mr. Roger Williams, F.R.C.S., has recently published a monograph upon diseases of the breast, of which J. William White[1] says: "Mr. Williams, whose previous work in this same direction has been noteworthy, has now given to diseases of the breast a broad and comprehensive consideration which makes his monograph the most valuable contribution of recent years to our knowledge of the subject." Mr. Williams' book is undoubtedly of great interest, for he has carefully collected and arranged a vast array of facts bearing upon his subject. He makes, however, the startling statement that 95.74 per cent. of all breast-tumors are of archiblastic origin, and only 4.26 per cent. of parablastic origin. If we really believed that nearly 96 per cent. of all tumors of the breast were of epithelial origin, there would be no excuse for leaving any tumor in a breast a moment longer than necessary for its removal; but the explanation of this statement by Mr. Williams is that he regards the common adenoma as an archiblastic tumor because he finds in it the epithelial lining of the glandular ducts, which he believes to be originally derived from the ectoderm. This is, in my own opinion, so grave an error as to destroy the foundation of all his subsequent deductions. Again, says J. William White: "He minimizes the influence of trauma and of pre-existing inflammatory lesions, contrary to the widespread belief both in the profession and among the laity, and concludes his careful review of this part of the subject as follows: 'The outcome of all this is that intrinsic causes are much more important factors in the origination of cancer than extrinsic ones, which are by no means its necessary antecedents. In the vast majority of cases the outbreak of this disease seems to be entirely spontaneous; that is to say, it cannot be attributed to the immediate action of any appreciable extrinsic cause whatever. The occasional transformation of innocent into malignant growths must be admitted.'" But he thinks this is very different from admitting that such neoplasms are specially prone to develop into malignant disease.

Here again his reasoning, I think, is faulty. He persists, like many others, in refusing to take into consideration the statement invariably made by

[1] American Journal of Medical Sciences, October, 1894.

cancer-patients that the cancer was preceded by some traumatic or inflammatory condition, while he accepts without question any other statement that the patient may make. I began my medical career with the same prejudice. I did not believe that cancers or benign tumors were usually preceded by inflammatory changes. I was annoyed by the persistence with which patient after patient gave the history of a bruise or an abscess, then a knot or lump; then, perhaps, a period of quiescence, then a rapidly developing tumor.

A case came under my observation of a bruise followed by an abscess. The abscess was evacuated and a brawny infiltration remained. In a year the brawny infiltration had disappeared, but a mass of



connective tissue could be felt deep in the gland at the seat of abscess. A year later this tumor began to grow rapidly and became painful. In order to remove it I found it necessary to remove the whole breast, and I was much surprised to find the tumor a typical adeno-fibroma, with a typical nodule of scirrhous carcinoma in its centre. This case I reported in full in the *Virginia Medical Monthly* for December, 1891. There is no anatomical bar to such an occurrence. It is contraindicated by no known physiologic or pathologic law. On the contrary, it is just what we would expect to occur under the circumstances: at least, up to the point of formation of the fibrous tumor. Then why should we throw out the overwhelming mass of testimony to show that tumors, both benign and malignant, are usually preceded by inflammatory conditions?

Let us go a step further and see how a benign tumor may become malignant. It is acknowledged by nearly all authorities that this change does occasionally take place. Mr. Williams admits it, while he deprecates its importance and minimizes its frequency. We can readily understand how a fibrous growth may become sarcomatous when we remember that there is no sharp anatomical distinction between these two classes. An increase of irritation, a more rapid cellular infiltration, is all that is necessary to make the change.

With carcinoma the case is somewhat different. We must introduce a new element—the proliferating epithelial cell. In every fibrous tumor of the breast we have epithelial cells lining the glandular ducts.

Physiology teaches us that these epithelial cells are under the influence of nerves, presumably by contact with a minute axis-cylinder fibril. Golgi's method of staining has shown us that these minute nervous fibrillæ exist in great numbers where they were previously unsuspected, and that they come into close proximity, if not actual contact, with each cell. There is scarcely a doubt that we shall now be able to trace them to the epithelia contained in adenomata; but it is easy to conceive that the contraction of newly formed connective tissue or that inflammatory infiltration may destroy by pressure all such nervous connection with some of the glandular epithelial cells. We would have then a cell resembling an amœba entirely severed from all connection with the central nervous system, free to revert to its ancestral type, free to multiply *ad libitum*, free to wander into new fields and infil-

trate new tissue, provided the ever-active leucocytes allow it to do so. Such a cell may prove to be the long-sought cancer-bacillus or cancer-amœba. As in the case of bacterial invasions, a warfare would immediately begin between the invaders and the leucocytes, and the result would depend upon the relative numbers and activities of the opposing forces. Let the leucocytes succeed in surrounding and closely walling up the invaders, and they may be held prisoners indefinitely or die and degenerate in their prison. In this way some of the cysts and cheesy nodules found in older mammary adenomata may originate. In such cases the tumor would remain temporarily benign, but would increase in size.

In some cases the invaders may be few and scattered, and may be squeezed out of existence by the connective-tissue development without leaving behind a tangible trace. We may thus account for the source of continued irritation and growth in some apparently benign growths. Indeed, the possibilities are almost unlimited. Once get a few epithelial cells separated by inflammatory infiltration, or connective-tissue development, from the general nervous system, and the varying fortunes of war between them and the leucocytes, influenced as they are by the relative activities and numbers of cells on either side, by the vascular supply and consequent reinforcement of leucocytes, by the vigor and resistance of the fixed cells of the tissue, and by many other remote and direct conditions, give us data sufficient to account for all the phenomena observed in tumors of the breast. It would take up too much time and be out of place here to attempt to show all the many ways in which the scale may be turned in favor of one or the other of the opposing armies; but we can readily understand how, if the invading archiblasts increase and travel a little too fast for the leucocytes to surround and imprison them, we will have exactly the conditions necessary for the formation of scirrhus: acini here and there, filled with cells, and a continual escape of a few scattering invaders into surrounding tissue, there to repeat the process or to be taken up by lymphatics and carried to distant parts, to start a new focus of infection. On the other hand, if the leucocytes are of sufficient activity, they will succeed in either destroying the invaders or holding them in check, and the growth will appear benign, or may even remain stationary for long periods; but if such a condition of affairs exists, there will always be danger of an irruption.

The evidence in favor of such a theory is considerable. In the first place, there is in it no contradiction of any known anatomic condition or physiologic law. On the contrary, it is just what we would expect under the circumstances from our knowledge of biologic processes in general. It coincides with and explains all known facts, and makes intelligible many facts that are otherwise mysterious or inexplicable. Each step in the process is known and admitted actually to occur in nature under similar circumstances. Microscopic sections apparently show these processes actually taking place. The accompanying microphotograph of an adeno-sarcoma, kindly given me by Dr. Gray, of the Army Medical Museum, seems to show an eruption of epithelial cells from a broken-down tubule that is surrounded by a mass of fibrous tissue and apparently deprived of nerve-influence.

Patients with malignant tumors almost invariably give a history of previous inflammatory affections, although this evidence has been persistently and systematically ignored. Malignant tumors are more frequent in organs most subject to inflammatory and traumatic irritation. Indeed, it would seem that they never occur in normal healthy tissue, but always in some previously infiltrated tissue.

In view of these facts, it seems more than probable to me that malignant growths usually originate in some previous inflammatory condition or fibrous tumor. However this may be, when we come to deal practically with mammary neoplasms we must admit that in their incipiency it is impossible to say whether they are malignant or benign, and that, even when well developed, apparently benign tumors sometimes suddenly take on the characters of malignancy. We must also agree that it is only in the very early stages of carcinoma that we can expect a large percentage of cures from removal of the growth; but, of course, all inflammations do not necessarily produce tumors of any kind. To produce a malignant tumor we must have prolonged irritation, and finally a separation of some epithelia from central nervous influence, and not only so, but we need perhaps a certain amount of inactivity or debility of leucocytes. This may be hereditary and account for the hereditary tendencies to cancer, or may be acquired in a variety of ways. The majority of surgeons to-day agree with Heidenhain that carcinoma is at first a local disease, and that recurrences are due to incomplete ablation. I wish to emphasize the fact that it is only very early in its development that we can make a complete removal. The very moment that the usual signs of malignancy begin to show the chances for complete removal become greatly lessened. The fact that some cures result from late operations does not in any way invalidate this statement. It is the general belief, borne out by the experience of others and by my own, that operations properly done at a sufficiently early period will almost invariably prove successful. In 1890 and 1891, and the early part of 1892, I operated upon four cases at a very early period, before there was any fixation, enlargement of glands, or other

sign of malignancy. In fact, in each of these cases I supposed the tumors to be benign before beginning the operation; but the lack of encapsulation and some infiltrating streaks of connective tissue led me to remove the entire gland. The axilla was not opened. Microscopic examination of these four tumors showed them all to be carcinomas. One of these patients, above referred to, was nineteen years old at the time of operation; the others were aged respectively twenty-eight, thirty-one, and thirty-eight. All are still living under observation, and after more than three years have had no recurrence. Since 1892 I have operated in a similar manner upon five others at an early stage; all proved to be carcinoma by microscopic examination, and are free as yet from recurrence after a period of from two and a half years to two months. Sufficient time, of course, has not elapsed to say that the latter five cases are cured; but I feel quite sure that there will be no return in any of them, and that a complete removal of the gland while the tumor still has the clinical appearance of a benign growth will give us nearly 100 per cent. of cures. Contrast this with the statement made by the elder Gross, shortly before his death, to the effect that he thought he had never cured a cancer, but operated merely for moral effect. If anything like 100 or even 50 or even 25 per cent. of cures is to be obtained by any operation, that operation must be done very early—so early in fact that we will not be able to say that the growth is malignant until we have made a section of it. The longer we wait the smaller will be the percentage of cures. Are we then justified in removing every tumor of the breast as soon as discovered? I think we are, for the following reasons:

Cancer is increasing more than any other known disease. Williams, in his recent work on *Tumors of the Breast*, estimates the number of cancers in England and Wales in 1840 at 4500, and in 1895 at 40,000. No other disease can show anything like such an increase. I have recently seen statements from reliable sources to show that the increase in America is in about the same ratio. In the case of any given incipient tumor of the breast in a woman between thirty and forty years of age, the chances are that it is malignant. Earlier or later in life the chances become more and more in favor of the tumor being benign; but I hardly think we should dare to await development, even if the chances were ten to one that it would prove benign. After a tumor has attained a considerable growth and remained for some months without perceptible change and without showing evidence of malignancy, the chances that it will ever do so are comparatively small. Every time this subject is mentioned some one will arise in the discussion and say: "Why, I know a woman, Mrs. So and So, who has had a tumor of the breast for thirty years, and another who carried one for twenty-five years, and you need not tell me these tumors should be removed." Now, I grant that such tumors do usually run a benign course to the end; but I think if you will be on the lookout for such cases, as I have been for two or three years, you will soon be surprised to find how many of them suddenly give evidence of malignancy. They have either been malignant from the first, or some battle has been going on in them all these years, such as I have described above. I can give no figures as to the frequency of such a change. It is impossible at present; but my own idea is that at least one out of ten apparently benign tumors will undergo a malignant change sooner or later if not removed. And this change may possibly take place after removal, as instanced by a case related to me by Dr. Gray, of the Army Medical Museum. He examined a tumor that had been removed and found it benign; but a recurrence took place, and the second growth was malignant. If there is any truth in the foregoing observations, the chance that any given tumor of the breast is malignant or will become malignant is anywhere from 10 to 50 per cent. With such a prospect or even with chances of one in a hundred for malignancy, I think we should not hesitate to operate. Even leaving out the question of malignancy altogether, it seems to me there are sufficient reason and justification for removing all tumors of the breast at an early period.

They are always a source of anxiety and annoyance. They are often painful at times, particularly at the menstrual periods, and they usually continue growing for a long time and become more and more troublesome as time passes. There is scarcely any danger in the operation. Almost the only objection is on cosmetic grounds, and it is questionable in my opinion whether a tumor is more a thing of beauty than a scar; but if the operation is done at a sufficiently early period, there need be little disfigurement unless the growth presents some evidence of malignancy. If the tumor is encapsulated, I think it is sufficient to remove it entire in its capsule. And if the tumor is small, there will be very slight disfigurement; but if the tumor is not encapsulated, the whole gland should be carefully removed. I do not believe it is necessary or advisable to open the axilla unless there is at least a suspicion of malignancy.

I have said nothing about microscopic examination before operation, because I believe cutting the tumor before operating for its removal may cause a rapid change or an escape of cells that will infiltrate new tissues and perhaps be the cause of recurrence. And there is no doubt in my mind that all these tumors should be removed without any cutting into the tumor, without rough handling, pulling, or

squeezing. All cases should be examined microscopically after removal and recorded for future statistics. I imagine that many surgeons would be greatly surprised if they could see sections from all the small tumors they have thrown away without examination. There would be a vastly greater per cent. of malignant growths among them than most of us suppose. I would also urge that these microscopic examinations be made with great care by a competent man, and that he be given the whole tumor to examine, for it often happens that tumors present very different appearances in different parts of the growth.

There is little or no difference of opinion as to what should be done for plainly malignant growths. Thorough removal is the only hope, and the present operation of removing the pectoral muscles and axillary fat and glands is perhaps the best that we can do; but there are two very distinctly different ways of performing this operation. I shall briefly describe what I believe to be the important points to be observed. Begin with the axilla, so as not to force any cancerous material or cells from the axilla into the deeper tissues while manipulating the breast. Cut down to the axillary vessels, and tie all branches passing into the tissue to be removed. Remove the axillary contents in one mass by clean cutting with a sharp knife and without picking or pulling. In this way the axilla can be thoroughly cleaned in one-tenth the time and with less danger and hemorrhage, and less danger of squeezing infecting cells into the tissues that are left. Extend the incisions down over the tumor so as to enclose and remove all diseased skin and a considerable margin, at least an inch, of healthy skin. Turn back the healthy skin on each side so as to expose all tissue to be removed, and then remove it in one piece by clean cutting.

I would like also to say a word against any operation after a well-marked cancerous cachexia has appeared or secondary growths have begun in internal organs, unless it be clearly understood by all concerned that it is only for palliative purposes. The undertaking of hopeless operations, as a rule, only brings surgery into discredit, and deters others from undergoing proper operations at the proper time. Patients with tumors have inquiring dispositions and communicative friends. They hear of every failure in the city, and are often in this way persuaded to put off an operation until forced to it by suffering, when it is too late.

THE school census which was ordered to be taken by the police department in New York City has been completed in all but eighteen districts. The reports so far received show that 399,314 children have been enumerated.

CURETTAGE IN THE TREATMENT OF TRACHOMA.

BY A. N. STROUSE, M.D.,

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IN view of the frequency and obstinacy of this affection, a large number of methods of treatment have been suggested from time to time, many of which, after a brief period of trial, have been relegated to obscurity. It is my intention here to discuss briefly those procedures which are most extensively employed at the present time, and then to describe a method which in my hands has proved superior to all others, and has practically taken their place in my practice. My remarks apply chiefly to the severer forms of trachoma, although it must be remembered that even in the milder varieties recourse must now and then be had to radical measures.

Probably the method which still enjoys the widest popularity among ophthalmologists is the application of such caustics as the solid stick of sulphate of copper or pure alum. This serves a useful purpose in milder or more recent cases, but after it has been given a fair trial it is often found that, after a certain amount of apparent improvement has been effected, the disease remains stationary, and in that event more radical measures are demanded. At any rate, even in favorable cases, the treatment by caustics is usually protracted, and requires a considerable degree of perseverance on the part of the physician and his patient, while it is often quite painful, especially at the commencement.

Among the operative procedures the one most in vogue is expression. The cruder way of practising this procedure consists in squeezing out the contents of the follicles by means of the finger-nail, or the copper stick when applying it. This, however, is less thorough and effective than the use of one of the various forms of forceps devised for this purpose, among which the roller-forceps of Prof. Knapp is the most applicable. Expression has certain disadvantages which, in my opinion, greatly detract from its value, chief among which are the following: The forcible expulsion of the trachoma-follicles produces extensive laceration of the delicate conjunctival tissues. The deeper-seated follicles are evacuated with difficulty. The pressure required to eradicate the disease thoroughly, especially if, as frequently happens, the roller of the instrument does not rotate, but glides over the surface, is so considerable that the underlying tissues are subjected to severe contusion, which retards healing of the affected part. In consequence of this the reproduction of normal epithelium, after expression, is impaired, and an excessive amount of cicatricial tissue produced; moreover, certain parts of the con-

junctival sac cannot readily be reached with the roller-forceps. Aside from these objectionable features, the pain attending this method is so marked as to necessitate the employment of general anæsthesia.

Among operative procedures in the treatment of trachoma, grattage, next to expression, is probably most often resorted to at the present day. As commonly practised, this operation consists essentially of scarification of the conjunctiva with an instrument provided with a number of sharp blades, followed by rubbing with a stiff brush moistened with a strong solution of bichloride of mercury (usually of the strength of 1 : 500). The brushings are repeated once daily for a week, at the end of which time a cure is sometimes effected. An extensive trial of this method has led the majority of ophthalmic surgeons to discard its use, as it has been demonstrated that its disadvantages more than counterbalance whatever benefits may be derived from it. Extensive cicatrization is apt to result in consequence of the numerous and necessarily deep incisions, producing contraction of the conjunctiva of the lid, and entropion. Very little of the normal conjunctival membrane is visible after the operation, its place being taken by a cicatricial mass. Equally common sequelæ are cicatricial bands between opposing surfaces of the ocular and palpebral conjunctiva. This method, like expression, requires general anæsthesia, as it is attended with so much pain that the local application of cocaine is unavailable.

Excision of the retrotarsal fold may be dismissed with a few words, as it is an incomplete and unsatisfactory method, and is but rarely employed. The same objections apply to puncture of the trachoma-follicles with the galvanocautery-point, as well as to abscission and evacuation of the follicles with the needle, and similar procedures.

Recognizing the uncertain results derived from the methods above described, I was led about five years ago to devise a plan of procedure which in my hands has proved its superiority over all others with which I am acquainted.

This method consists essentially in curettage of the trachomatous tissue with a sharp curette shaped like a cataract-spoon. The cutting-edge of the instrument measures about 1.5 mm. in width, and is ground sharp in its entire circumference, while the back of the curette is flat and smooth.[1] The shank should be elastic and yet sufficiently firm to withstand ordinary pressure, and is attached to a metal handle, so that the instrument can be properly sterilized. (See illustration.)

[1] It was suggested to me that the spoon be fenestrated, but this is not advisable, for if the back of the instrument should come in contact with the cornea it would undoubtedly do more or less damage. The curette is made for me by F. G. Schmidt, N. Y.

After thoroughly cocainizing the conjunctiva the lower lid is everted and rapidly scraped over its entire extent. Then the upper lid is everted and held between the thumb and finger of one hand, while the curette is passed up into the fornix, and this part of the conjunctival sac scraped, care being taken to penetrate all the folds. The everted portion of the lid is treated last. During the entire procedure, which occupies but a few minutes, an assistant mops the lids with absorbent cotton dipped in an antiseptic solution (a saturated solution of boric acid or a bichloride solution 1 : 10,000).

When the hemorrhage, which is only slight, has ceased, we see a surface which is smooth except for a number of depressions or small cavities. These are deep or shallow, according to the seat of the trachoma-bodies contained therein. The surfaces are now thoroughly washed and touched with a 2 per cent. solution of nitrate of silver. This is really the only part of the operation that elicits any pain, and by the instillation of a few additional drops of cocaine even this may be entirely avoided.

The after-treatment consists in the application of iced pads for one-half to one hour, and by the end of this time any reaction will be found to have subsided. That the reaction, however, is inconsiderable is shown by the fact that ignorant dispensary patients, who frequently neglect to obey instructions, rarely complain of any inconvenience following the operation. The patients are ordered to return every other day, when they are again treated with the silver solution. The latter has given me better results than the 1 : 500 bichloride solution, which I first employed when it was recommended by the advocates of grattage. After the eighth to tenth day, when the epithelium is completely regenerated, and the cavities left by the trachoma-follicles have completely granulated and are flush with the surface of the conjunctiva, I sometimes discontinue the silver application and resort to the copper stick. This treatment is continued for the following week or two, at which time the patients are usually completely cured. The palpebral conjunctiva is now smooth, the thickening and induration of the lids have markedly subsided, and pannus, if it has existed, shows a tendency to subside without further treatment, or even may have disappeared completely.

If at the end of four weeks the cure is not complete, the curetting should be repeated. The second operation is even of a more simple character than the first, as it is not necessary to curette so deeply and extensively, and naturally the reaction is even slighter than before.

This, in brief, is the plan of treatment which, in my opinion, should be given a high place in the therapeutics of trachoma. I will not occupy your time by reports of cases nor weary you with an extensive bibliography of the subject. As far as I am aware, Sattler was the first to call attention to the value of curettage in the treatment of trachoma; but for some time previous to the publication of his article I had been employing the operation devised by me and demonstrating its technique to my class of students at the New York Polyclinic. The method differs essentially from that of Sattler, who resorts to puncture of the follicles with a cataract-needle before the use of the curette. Davier, who has employed Sattler's method, lays less stress on the scraping than on the brushing and washing of the cul-de-sac with sublimate solution. Secondi recommends curettage followed by expression of the follicles with a special forceps. Peters advocates scraping the mucous membrane with a dull lancet. In fact, as far as I can learn, all those who have employed curettage have combined this procedure with scarifications, brushing, needling, expression, and other auxiliary measures, and no one has made use of curettage, pure and simple, as recommended in this article. It might be supposed that the removal of the conjunctival epithelium and deeper tissues with the sharp curette would be followed by extensive formation of cicatricial tissue; as a matter of practical experience this is not the case, the epithelium is almost completely regenerated, and the subconjunctival tissues assume a soft and pliable character except where scars had resulted from deeper-seated trachoma-follicles.

Indeed, this seems perfectly explicable when it is remembered that the curettage of granulation-tissue, and necessarily of more or less of the deeper structures, is constantly resorted to in other mucous surfaces of the body, with the result of a perfect restoration of the function of the affected membrane.

In conclusion, I would emphasize the following advantages which curettage possesses over other methods advocated for the treatment of trachoma:

1. Its uncomplicated technique and the rapidity with which it can be performed.

2. Its comparative freedom from pain, enabling us to dispense with general anæsthesia.

3. The minimum injury inflicted upon the conjunctival and subjacent tissues.

4. The absence of inflammatory reaction after operation, permitting the patient to follow his usual occupation without discomfort. This is an important point in its favor in comparison to other operative procedures which confine the patient to his room for several days.

5. The simplicity of after-treatment, which is of importance, in view of the fact that the majority of trachoma cases occur in the lower walks of life.

6. The radical character of the operation, recurrences being rarely observed.

TETANY, WITH ILLUSTRATIVE CASE.

By GEORGE W. MILES, A.M., M.D.,
of Oneida, N. Y.

Very little mention of the disease known as "Tetany" is found either in text-books of general medicine or in special works on nervous diseases. An interesting and exhaustive study of the subject has been published by Professor J. P. Crozer Griffith, of Philadelphia.[1] Dr. Griffith expresses surprise at the scarcity of records of tetany to be found in American medical literature, and speaks of the disease as one of "rare occurrence in this country."

A short time previous to the publication of Dr. Griffith's paper (December 11, 1894) I reported to the Madison County (N. Y.) Medical Society a case of tetany occurring in my practice. It is possible that, in view of the conceded infrequency of the disease, a brief consideration of the subject of tetany, in connection with the history of my own case, may be of interest.

In a work published quite recently is found the following definition of "Tetany," "Tetanilla," or "Little Teta-nus": "A functional disease of the nervo-muscular apparatus, characterized by the occurrence of paroxysmal tonic spasms that involve certain groups of muscles, and that in severe cases may extend to nearly all the voluntary muscles of the limbs and body." This definition gives little idea of the terrible intensity of suffering that marks the clinical history of tetany. The nerves that are concerned in the production of the contractions exhibit an immense increase of electrical and mechanical excitability. The functional character of the disease has led many observers to doubt the propriety of dividing it from other functional spasmodic disorders, or as to regarding the disease as a separate entity. The disease is observed more frequently by physicians in general practice than by those whose experience is limited to office and consultation practice. The weight of opinion seems to be that tetany occurs most frequently among children. The influence of sex is not very decided. Persons who have been exposed to cold or wet seem to be particularly liable to attacks of tetany. Stubborn constipation or any intestinal irritation is liable to provoke an attack. Dentition is said to be, likewise, a cause. Attacks occur also in connection with other diseases, particularly typhoid fever. Constitutional causes favor its development.

[1] American Journal of the Medical Sciences, February, 1895.

When a predisposition to tetany exists almost any irritation of the cutaneous or mucous surfaces may excite an attack of the disease.

The occurrence of an attack is usually preceded by certain premonitory symptoms, as dizziness, determination of blood to the head, humming noises in the ears, and disturbance of vision. When the attack is matured, the force of the paroxysms is expended upon certain groups of muscles, the flexors being affected more frequently than the extensors. Neuralgic pains and soreness are complained of, headache, dizziness, and other cerebral symptoms of sensory disorder. The increased and inordinate excitability of the motor nerves is further indicated by their behavior under the influence of mechanical stimulation, a slight tap upon the nerve-trunk being sufficient to arouse a paroxysm. The duration of a paroxysm may vary from a few minutes to many hours, or even two or three days. The disease might be confounded with tetanus, but is lacking in the rapidly increasing severity of the phenomena of that terrible disease. Although a few examinations post mortem have been made in tetany there is little known of the pathology of the disease. One observer claims to have found a periarteritis and a periphlebitis of the bloodvessels of the white commissure and of the anterior horns of the cervical portions of the spinal cord. Others have found nothing of the kind, but, in the place of pathological facts, have built up an ingenious theory that the attacks of tetany are due to an irritable condition of the gray matter of the medulla and spinal cord, and that this irritable condition is due to sympathetic disturbances, causing irregularities in the vascular innervation of the bloodvessels of the spinal cord. This, however, does not appear to be a very lucid explanation of the attacks. The disease is seldom fatal, but sometimes persists for a considerable period of time. In these lingering cases a certain degree of muscular contracture and weakness is often evident after the cessation of spasmodic attacks. The disease has a distinct symptomatology, and this will be best illustrated by the narration of the case before mentioned.

In October, 1894, Florence S., a girl, aged seven years, was brought to me with the request that she be vaccinated. I performed the minor operation in the ordinary way, and in the usual site upon the left arm. About ten days later severe inflammatory symptoms supervened upon the full development of the pock, caused by undue traumatism, the child having injured the arm and destroyed the original vesicle by scratching or rubbing it during sleep. The inflammation was readily relieved by an anodyne and astringent lotion. A considerable wound resulted, however, and there was sloughing of the skin over a space as large as a silver half-dollar. After subsidence of the inflammatory action the healing process was rapid and the arm improved daily. About six weeks after the vaccination, on the morning of November 14th, I was asked to see the child, the parents being much alarmed about her. At this time the sloughing surface upon the arm was rather an insignificant one. The general symptoms, however, were severe and so closely simulated tetanus as to be startling, to say the least. There were tonic spasms of the arms and legs, succeeded by the same condition in the muscles of the neck and back, and likewise in the abdominal muscles. In the latter, particularly, the rigidity was so great as to elicit cries of pain. The muscles of the neck remained for the most part in a state of tonic contraction, so that any movement of the head was rendered quite impossible. The rigidity of any of the muscles was so great that passive movements were impossible. The muscular groups of the forearm, the upper arm, and the legs were involved. The facial muscles were affected, and the grimaces and contortions resulting served more thoroughly to alarm the friends. The muscular spasms were bilateral. The tips of the fingers and thumbs were drawn together into a conical shape. Some of the toes were flexed and bent laterally under the other toes. The upper arms were drawn against the sides of the thorax and the forearm strongly flexed. There did not seem to be any involvement of the muscles of the diaphragm or bladder, as reported in some cases. These paroxysms lasted only a few moments at a time, but continued intermittently for three or four days, and in the beginning at least the phenomena of tetanus were closely counterfeited. Opisthotonos occurred frequently during the first day. Several authorities, while speaking of the startling resemblance which tetany bears to genuine tetanus, mention as distinguishing the diagnosis that trismus occurs in the outset in tetanus, and is not apt to be or is not often found in tetany. In this case this diagnostic aid was not given me, as the initial spasm of the masseters was a prominent feature of the case. The jaws were so firmly set together that the handle of a spoon could not be inserted flatwise. Any attempt to stir the child in bed was immediately followed by a tense and extremely rigid condition of the entire muscular system. The increased mechanical excitability, which is a well-marked symptom of tetany, was very prominent in this case. The slightest sound, even speaking the patient's name or extending the hand toward her or touching the surface was sufficient to produce a paroxysm. These spasms continued, as I have said, for three or four days at irregular intervals. The patient slept very little for all of that time during the day or night, a light sleep of fifteen or twenty minutes being followed by her awakening with screams and new paroxysms and pain in the contracted muscles. The pain complained of was sometimes in the jaws, sometimes in the left arm, sometimes in the abdominal muscles. Following each spasm the entire surface of the body was bathed in perspiration. While in the beginning the spasms occurred several times in the space of an hour, the intervals of relaxation became gradually lengthened, and much

relief was obtained, though some stiffness of the muscles remained after three or four weeks. After the second day the relaxation of the jaws for a portion of the time was sufficient so that a tube could be inserted between the teeth, and in this manner it was necessary to introduce nourishment. This method of feeding was followed for about two weeks, as for that entire period the masseter muscles were never entirely relaxed except occasionally during sleep. The bowels were greatly constipated. The pulse during the height of the attack remained at about 140 at night and 120 in the morning. There was very little rise in temperature, at least not to exceed a degree. I learned that for a couple of weeks preceding the complete attack nervous symptoms had been noticed by the parents, slight rigidity of the muscles, disturbances of vision, etc. The result of this case was complete recovery. Convalescence was considerably prolonged.

While the condition in this case at first sight was, as I have said, quite startling, and the simulation of true tetanus was great, still the complete recovery (a circumstance not within my experience in tetanus), a consideration of the latent period which had existed, the prominence of the mechanical excitability, the complete relaxation of all the muscles during the intervals of the attack, all of this leads me to the belief that the disease was not the graver one. The idea of an hysterical element in the case was not lost sight of, but all symptoms and the entire history seem to admit of classifying this case with those of tetany already reported.

How much, if anything, the vaccination or the wound following had to do with the symptoms which existed I do not know. I imagine that these matters were neither directly nor entirely causative. In the minds of the frightened parents, however, the vaccination was the only thing prominent, and the night-calls, the extra work, and the unnecessary trouble that was made me for three or four days were such as almost to make me wish that the immortal Jenner had never been born.

I know that the child is of a general neurotic temperament; she was of a constipated habit; she had been exposed to the cold and wet; she had at the time an extremely sore mouth, the result of digestive disturbances. Each of these things and many others are believed to have been causes of special cases of tetany. I have no doubt that some or all of them entered into the etiology of this case, and it is possible that the irritation of the cutaneous surface by vaccination may have likewise been a factor.

THE CHAUTAUQUA COUNTY MEDICAL SOCIETY will hold its semi-annual meeting at the Sherman House, Jamestown, N. Y., on January 14, 1896. An attractive programme has been arranged, and a cordial invitation of attendance is extended to the profession of Chautauqua and adjacent counties.

IMPERATIVE CONCEPTIONS AS A SYMPTOM OF NEURASTHENIA.[1]

BY THEODORE DILLER, M.D.,

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UNDER the term imperative conceptions have been described a great variety of morbid impulses and fears which thrust themselves into consciousness. They may arise in a great variety of mental states or be present as an isolated symptom. They are always to be regarded as a symptom, never as a disease. The term imperative conception is somewhat misleading in that the command it implies is by no means always obeyed. Morbid impulses may frequently and for many years arise in an individual, and yet always be successfully resisted.

Probably in all of us impulses, fears, or doubts arise suddenly in consciousness as isolated thoughts or emotions, and which may be apparently totally disconnected with the mental state immediately preceding their appearance. For instance, many of us, I presume, have been seized with the desire to count the windows or doors in passing along a street, or in walking to avoid carefully the cracks in a pavement or to touch fence-posts. Looking from a great height the idea occurs to most persons to precipitate themselves below. The sight of a fragile piece of china or glassware suggests the idea that it could be readily crushed. A helpless child or a feeble invalid suggests how easily each could be killed. Certain words or phrases, lines of poetry or bars of music, may thrust themselves into consciousness at odd times.

These simpler forms of imperative conceptions cannot, of course, be considered abnormal in view of the fact that they probably occur in some shape to all persons. In normal individuals they never result in action contrary to volition. In their exaggerated form, whether seen alone or in conjunction with some neurosis or psychosis, they constitute a serious symptom, and may be the dominant feature of a grave form of insanity. Between the extremes there are all gradations; and to say when an imperative conception ceases to be physiological or within the bounds of health would be as difficult as to say where sanity ends and insanity begins.

Many morbid impulses and fears have received special names. The impulse to steal has been called kleptomania; to set fire to property, pyromania; the fear of open places, agoraphobia; the fear of narrow places, claustrophobia; the fear of dirt, mysophobia; the fear of crowds, anthropophobia; fear of fears, phobophobia.

The French, especially Morel, have described

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[1] Paper read before the Pittsburg Academy of Medicine, December 23, 1895.

and isolated two forms of obsessions, which have been named *délire du toucher* and *folie du doute*. Fear of contamination and doubts are, of course, present within the limits of health. Many individuals are hypercritical as to cleanliness, or unduly fear disease, or contagion. Doubts arise in all of us. The uncertainty as to whether a letter posted was sealed or had a stamp affixed to it; whether the gas has been turned out, or the door locked, or the heat regulated, has haunted most of us. I know a bank officer who, in receiving money, often counts it over two or three times oftener than would appear to be demanded by a reasonable caution. These doubts may assume such exaggerated forms as to constitute a true insanity, the *folie du doute* of the French. The difference between the minor forms of doubt and the grave forms going to constitute *folie du doute* is, as has been emphasized by Hack Tuke and Hughlings Jackson,[1] one of degree only. I recall a patient who was constantly pestered with doubts of all descriptions. If she was eating, she felt she ought not to be doing so; if sitting, she ought to be standing or walking; if knitting, idle; if in bed, out of it, etc., *ad infinitum*. She could never be addressed without expressing doubts, which were to her a real source of distress. She was, in short, a case of *folie du doute*.

There can now be little doubt that certain crimes are due to sudden impulses which arise in the minds of persons who are not ordinarily regarded as insane, and which the subjects are wholly unable to resist.

Impulses to suicide, or to make assaults, or do deeds of violence, or commit crimes, arise in many persons, and yet do not result in action—are not obeyed because they are put in subjection, so to speak, by the inhibitory forces of the mind. When an impulse to commit crime arises and the inhibition to check it is insufficient, the crime is committed. This is the philosophy of the suicidal and homicidal impulse. "Pinel and Esquirol at first doubted the existence of pure insane impulse apart from intellectual flaw or delusion, and many authorities of repute have since their day considered the doctrine a dangerous as well as a fallacious one; yet eventually Pinel and Esquirol asserted the existence of this terrible malady and painted its distinctive features in no uncertain colors." Bevan Lewis, from whom I quote these words,[2] and Maudsley, are both firm believers in irresponsible, impulsive crime.

The simpler forms of impulses, doubts, and fears cannot, as I have said, be regarded as abnormal. In certain individuals, however, they may be so strong or persistent as to be distinctly morbid. For instance, the impulse to touch fence-posts might be obeyed, without exciting comment, by a person passing along a quiet country road and successfully resisted without great effort, when under other circumstances these actions would excite astonishment or subject him to ridicule. On the other hand, if he acted on the impulse, being unable to resist it, while walking with friends in city streets, the impulse would be distinctly abnormal. It might be present in the absence of any other abnormal manifestation of the mind. We must admit with Hack Tuke and Mercier,[1] I believe, as in the example given, that there are diseases of the mind other than insanity; in other words, to say that an individual has some abnormality of his mind is not equivalent to saying that he is insane.

From the fact that these morbid impulses, fears, and doubts are so frequently seen in those undoubtedly insane, and especially in the degenerative types of insanity, such as paranoia,[2] it seems likely, as suggested by Savage,[3] that most frequently in those cases where imperative conceptions appear as an isolated symptom they are the outgrowth of a neuropathic soil; they are marks of degeneracy. They may be in abeyance for years and brought to the surface by shock or disease, lowering vital tone, probably by lessening the inhibitory powers, and in other ways interfering with the association of centres in what Hughlings Jackson calls the upper range. "The man who to-day is conscious of and smiles at an imperative idea gravely believes it to-morrow and labors under a systematized delusion."[4]

With this brief survey of the subject of imperative conceptions in general, I propose to ask your attention to them as a symptom of neurasthenia.

Certain insanities, such as melancholia, mania, paranoia, and paralytic dementia, may develop upon a neurasthenic basis, as has been so well shown by Kirchhoff.[5] Neurasthenia may have been an early stage of insanity, or the mental symptoms may have been developed *pari passu* with the neurasthenic ones; but in either case it is of prime importance to recognize the neurasthenic condition. From the exhaustion, starvation, and poisoning of nerve-centres, which I take to be the basis of neurasthenia, arise many mental symptoms. These have been ably discussed by Cowles.[6] In individuals in whom there is a slight or latent tendency to imperative conceptions it is reasonable to suppose that they might become prominent upon the super-

[1] "Summer and Autumn," Brain, 1895.
[2] Text-book of Mental Diseases, p. 178.

[1] "Summer and Autumn," Brain, 1895, p. 328.
[2] See paper by writer on "Imperative Conceptions in Paranoia," Alienist and Neurologist, April, 1890.
[3] Brain, op. cit.
[4] Hack Tuke: Brain, 1894.
[5] Handbook of Insanity, pp. 327 *et seq.*
[6] Shattuck Lectures, 1892.

vention of the underlying conditions which produce neurasthenia. Indeed, in certain individuals where the conditions favor it, a morbid impulse or fear may appear suddenly and be the dominant feature in neurasthenia, as, for example, in this case:

A hard-working, robust-looking, professional man, aged twenty-nine years, was sent to me by Dr. W. F. Robeson last spring. Six weeks before, while sitting in the first balcony at the theatre, he experienced suddenly a strong impulse to precipitate himself below. In great fear and agony he left the theatre lest he should act upon the impulse The next day he felt strongly impelled to break all the china upon the table. After this he was seized with many imperative conceptions, and his life was one of great distress to him, as he feared he was going insane. Examination revealed a long train of neurasthenic symptoms: headache, morning-tire, loss of endurance, irritability, insomnia, etc. He had worked very hard, frequently over-taxing himself, mentally and physically, since boyhood, and while he suffered from some of these neurasthenic symptoms prior to the appearance of the sudden impulse and fear which came to him in the theatre, yet they were not marked, and he had almost wholly ignored them, and had in nowise drawn less on his nervous force in the prosecution of his work; but with the advent of these imperative conceptions his other neurasthenic symptoms became marked, and it was not difficult to discover them when I first saw him, and hence to recognize the morbid impulses and fears as belonging to them.

The case is an illustration of how the onset of neurasthenia may be apparently sudden. In some cases, where the output of nervous energy is greater than the ordinary process of recuperation, there is apparently some compensatory action for a time, just as we see in valvular heart-disease; but a time comes when compensation cannot keep pace with the extra demands, and the break may be, as in valvular heart-disease, sudden and alarming.

Firm assurances as to the absence of organic diseases and the harmlessness of these imperative conceptions, if the will-power were brought to bear, coupled with a semi-rest treatment, hydrotherapy, faradism, tonics, and occasional hypnotics, brought about in the course of six months a restoration to health. Several relapses, however, occurred, and for a time the patient was frequently seized with imperative conceptions of one sort or other; but with the assurances he had received they caused him much less fear. The most persistent of these impulses was to cast himself from a great height. For a time he feared to cross a river bridge lest he should give way to the impulse to jump over, or in crossing he would, at times, avoid the foot-path and walk in the wagon-track.

An instance showing the appearance of morbid fears in a well-established case of neurasthenia is seen in the following case:

M. C., a well-built, tall man, aged thirty-six years, an engineer, of good habits, was referred to me by Dr. J. D. Shull, of Derry, in June, 1892. Mr. C. had in the previous February been prostrated by a severe attack of influenza, following which he had suffered up to the time I saw him from marked neurasthenic symptoms, such as mental depression, insomnia, dull occipital headache, general muscular weakness, vertigo, flushings, tingling, muscular twitching, and constipation. After these symptoms had become established he began to suffer shortly before I saw him with morbid fears. Although long accustomed to his work he began to dread a wreck of his train. This feeling, he explained to me was, he knew very well, altogether groundless. Yet this fear came to him frequently and suddenly, causing him the most acute distress. It often caused him to turn pale and perspire, and on several occasions he called on the fireman to relieve him temporarily, feeling unfit to be at his post. He debated with himself whether it was not his duty to resign his position, and asked my counsel in the matter.

A plan of treatment similar to that pursued in the first case was instituted, and after several months he reported himself as restored to health.

The development of these morbid fears in a man suffering from a severe train of neurasthenic symptoms and their disappearance together with his other symptoms, leave, I think, little doubt that they resulted from the underlying condition of his nervous centres which had produced the other neurasthenic symptoms and of which they were only a part.

In all cases presenting the symptom of imperative conceptions it is highly important to make a careful search for neurasthenia and to determine, if possible, whether they be not an expression of this condition.

The prognosis of imperative conceptions is best when they result from the neurasthenic state. Speaking of them in a general way Savage[1] expresses the belief that they are incurable if they have existed more than a year, and he allowed only slight hope when they are acute or associated with any special cause or period of life. The experience taught by the two cases cited, however, would strongly indicate that the prognosis is good when they are associated with such a "special cause" as the neurasthenic condition. Probably the prognosis is as gloomy as painted by Savage when the isolated symptom is observed in a neuropathic subject.

Scant reference to the relationship between imperative conceptions and the neurasthenic states is made in works on medicine or neurology. In some of the more recent text-books on nervous diseases, however, as, for instance, in that edited by Dr.

[1] Op. cit.

Dercum,[1] in the excellent chapter on neurasthenia written by him, the subject receives a mention somewhat commensurate with its importance. No treatment of the subject of neurasthenia can be considered complete which omits mention of imperative conceptions as a symptom.

CLINICAL LECTURE.

BLEPHAROPLASTY, STRICTURE OF THE ŒSOPHAGUS, EPITHELIOMA OF LIP, SYNDACTYLUS, SUBDURAL CLOT.

Clinical Lecture delivered at the Buffalo General Hospital.

BY ROSWELL PARK, A.M., M.D.

CASE I.—About ten days ago I performed a plastic operation on this girl's face in order to make a new upper and lower eyelid. Whereas formerly she even slept with the eye open, she can now close the lids. The upper lid was taken from the temporal region, the lower from a V-shaped incision in the cheek. The upper wound was closed by collateral incisions and sliding of tissues, while the lower gap was closed as a linear wound. The scars are at present very noticeable, but they will fade in time.

CASE II.—This patient, an old man, has stricture of the œsophagus, and he is slowly starving to death; have proposed performing gastrostomy, but he positively declines operation. Seeing the end of life approaching he has yielded so far as to permit me to try electrolysis within the œsophagus. This is a procedure in which I have little confidence, but I shall put it in practice in order to do all possible for the patient's relief and with the hope that if this fails he will consent to surgical measures. The flexible œsophageal electrode is connected with the negative pole of the battery, and a current of twenty milliampères is passed for five minutes. We will repeat this every day.

CASE III.—The first operative case is that of a man of fifty-five years, who comes in with an ulcer on the lower lip, not quite in the middle line. It has an indurated base, which flares out so as to make the lip thicker than it should be. The area of infiltration shades gradually into normal tissue. There is no difficulty in making a diagnosis of epithelioma, from the age of the patient, the location of the sore, the refusal to heal itself, and the obvious presence of constant irritation of a pipe. This form of cancer has been called pipe-smokers' cancer. The teeth are badly decayed, foul, and covered with a carbonaceous deposit. There is a notch on the side of the cancer showing where the pipe-stem has habitually rested. The patient has unwittingly favored the growth of the cancer by a variety of applications which he has made. He has also relied on clover tea, and has only sought professional advice within the last few days, when the outlook, though not hopeless, is unfavorable. Epithelioma in this location is almost always seen in men of middle or advanced age; yet not long ago I had to operate on a young woman of twenty-eight who had as typical an epithelioma of the lip as this.

So far as I can feel, there is no lymphatic involvement; perhaps after the patient is anæsthetized I may be able to find enlarged lymph-nodes, and then it will be necessary to remove them. I have often told you that in operating for cancer you must remove all tissue that is invaded without false mercy, stopping only at organs essential to life. The operation consists in the exsection of a V-shaped piece of the lower lip, and, as the closing of this wound reduces the lower lip so that there is a relative redundancy of upper lip, I shall extend the mouth laterally and close this incision by a sliding of tissues, so as to equalize the two lips. This makes the operation longer and bloodier, but the cosmetic effect is better.

It has been customary to dress such wounds with collodion, since the ordinary antiseptic dressing is out of the question; but I have noticed that a little saliva usually works its way under the crust, or else the collodion is raised by an effusion of serum, bacteria enter, and suppuration ensues. Therefore for the last few years I have adopted the policy of allowing the line of sutures to be covered with a scab of blood, perhaps using a little collodion after a day or two, but not at first.

CASE IV.—This case is one of inguinal hernia, of short duration, in a man of thirty-two years. The tumor is only about as large as a hen's egg when the hernia is down. The intestine is now in the abdominal cavity. Having had the site of operation shaved, scrubbed, and disinfected, and surrounding parts shut off by damp bichloride towels, I shall proceed to cut down over the external inguinal ring. There is undoubtedly a serous sac, and the search for this is not quite so easy as it would be with the hernia unreduced. I shall look for it alongside the spermatic cord, which is easily felt. Having found and isolated the sac, I shall now carry out Kocher's idea, make an opening at the upper end of the inguinal canal, draw the sac up into the opening, and twist it. If this does not make a radical cure of the condition, I do not know what will. The outer wound is closed with a continuous subcutaneous catgut suture. Although it is not so important in this location, the subcutaneous suture has the advantage over the ordinary puncturing suture of leaving no cross-marks, so that after healing only a linear scar is visible.

CASE V.—This is morphologically an interesting case, that of a little child, with the middle and ring fingers of the right hand united, and with the middle, ring, and little fingers of the left hand webbed together, with a supernumerary finger between the last two. This condition is known to the laity as web-fingers, technically as syndactylus. Sometimes one sees a complete webbing of all the fingers, when the hand looks as if it were covered with a skin mitten. The condition is an evolutionary relic, a reversion to the condition of united phalanges as seen in many of the lower animals. The condition normally disappears early in the life of the human fœtus. There is nothing difficult about the diagnosis, and the general indication for treatment is plain, for parents do not wish this interesting condition to remain. The separation of the fingers is not, however, so easy as the separation of two pieces of candy that have become stuck together, and it is not sufficient simply to make longitudinal incisions without preventing the raw surfaces from again cohering. Whenever possible we make an oblique compound dissection between the bones, so that there remains on each finger a thin flap which can be wrapped around and sutured to the

[1] Nervous Diseases, by American Authors, p. 65.

skin on the opposite side. Sometimes there is not enough skin to permit this, and then we must simply spread the bones apart and pack in enough antiseptic material to prevent adhesion, and allow the surface to heal by granulation and subsequent cicatrization. A condition resembling syndactylus may be seen from burns or other traumatism and ulceration. When the syndactylus is congenital, it is an advantage to operate as early as possible, for parts thus bound together do not grow so rapidly as those which are free to move.

Supernumerary fingers are not uncommonly seen on the outside of the hand. Sometimes there will be two thumbs or a bifid terminal phalanx of the thumb. Similarly there may be two quite perfect little fingers or the sixth finger may hang like a flail on the little finger. This is a relic of the time when some animals had six digits. No congenital defect or anomaly is ever found which has not its analogue or explanation either in fœtal life or in some of the lower forms of the animal kingdom.

On the right hand I am having some difficulty in coaptating the skin about the little finger. On the left hand the removal of the supernumerary digit will allow plenty of tissue to cover the little finger. It will be interesting to note whether Nature, in supplying an extra finger, has provided it with flexor and extensor tendons. Such proves to be the case. The extra finger is smaller than the others and its bones are more slender. There are only five metacarpal bones, the extra finger sharing the articulation of the little finger. To-day I shall not try to separate the ring and middle fingers, but will wait till the wounds on the adjacent sides of the ring and the little finger have healed. The skin-flaps are sutured, the parts are anointed with antiseptic vaseline which has also been sterilized by heat, iodoform is dusted on, and the fingers are separated with iodoform gauze.

CASE VI.—This patient is a young man who fell on the sidewalk night before last, striking the back of the head. He was quite rational until last night, when he began to talk strangely and to make queer movements of the arms and thorax, and then he had a shivering of the entire body. Before the clinic I could get no answer to my questions, and I concluded that he was aphasic. Since then he has spoken brokenly and without finishing his sentences. His right arm seemed to be in a cataleptic state, staying wherever I put it. While waiting in the anæsthetic room he has had two convulsions, and on account of the irritative character of the symptoms I believe that the lesion is cortical and superficial, and having come on after an interval it is probably of the nature of a hemorrhage.

On inspecting the head since it has been shaved, I note a recent bruise in the middle line, a little above the occipital protuberance. A blood-clot here would not account for his symptoms, especially not for the interference with speech. I shall, therefore, trephine over the motor area of the left side of the brain, following symptoms rather than external appearances. A semi-elliptical incision exposes the left parietal region. The periosteum is retracted, and a chisel-wound made to catch the centre-pin of the trephine. I have endeavored to approximate the speech-centre, not by measuring by a scale, but from a general remembrance of anatomy. If the clot is large enough to require removal, I can get near enough to it in this way, and we almost always have to enlarge an opening after finding a clot, in order to meet particular indications. So far the operation is purely exploratory. It is possible that a localized meningitis could have produced some of the phenomena noted here, but hardly the aphasia. The patient's skull is thick—though this is no index as to his mental abilities. The dura is not bulging, but it is discolored by a clot beneath, and on incising it the clot is gradually pushed out by the pulsations of the brain. The clot is quite tenacious, showing that it is not very fresh. I have caught a small bleeding vessel with a hæmostat. Further oozing I shall endeavor to check by using this antipyrin spray. The clot is removed partly by the sharp spoon and partly by wiping with aseptic gauze, which has almost supplemented the sponge in modern surgery, the latter being so difficult to render aseptic.

I am glad to give Dr. Weidenbauer credit for sending this case to the hospital. He recognized the condition present, realized the importance of surgical relief, and has done everything possible except performing the mechanical part of the treatment.

It is quite probable that as the patient recovers from the anæsthetic, the relief of pressure will be manifested by speech and the rapid recovery of consciousness. The wound is dressed antiseptically, without complete closure of the scalp-wound, as we wish to provide for the easy evacuation of any further blood-clots that may be formed.

CLINICAL MEMORANDA.

CASE OF TRAUMATIC SEPTIC MENINGITIS. TREPHINING. TEMPORARY RECOVERY, FOLLOWED BY LARGE ABSCESS OF BRAIN.

BY ANDREW J. McCOSH, M.D.,
OF NEW YORK.

THE following case is of interest for three reasons: First, the marked improvement which followed the opening of the skull and drainage of the meninges, resulting apparently in cure or at least in the temporary recovery of the patient. Second, the persistence of the sepsis within the cranium for a period of four months without constitutional or local manifestations. This was proved by the presence of the same species of bacilli at the two operations. Third, the existence of an enormous cerebral abscess (eight ounces) and the absence of grave symptoms. There were no paralysis, no convulsions, no delirium or subnormal temperature, neither was there marked elevation of temperature. The only symptoms were moderate pain, a slight stupidity, and finally vomiting, but for ten days or more the patient had walked about as usual, had eaten with a good appetite, and had been fairly intelligent in spite of the presence of a large collection of pus in his brain. The fatal result due to pneumonia is another example of the close connection between sepsis in the brain and sepsis in the lungs.

H. H., aged thirty years, was struck or kicked on the forehead in a fight on *October 1, 1894*. He walked home, and made no special complaint until the following day, when he suffered from headache in the frontal and parietal regions, and felt so feverish and weak that he remained in bed. Toward evening he became

restless. On the following morning (*October 3d*) he was rather apathetic, and his restlessness had increased. His symptoms became worse during the day, and in the evening he was brought to the hospital in the ambulance. On admission he was stupid and complained of severe headache. Temperature 102°, pulse 80, respiration 30. The pupils were contracted and regular. There was no paralysis. At times he was very restless. Knee-jerks unaltered.

4th. Stupor had increased. He could be aroused with difficulty, and would then moan and show great irritability for a few minutes and again lapse into stupor. Temperature 100°, pulse 44 to 58, respiration 16. Operation was advised, as it was thought that there was a blood-clot pressing on the brain and probably a meningitis.

5th. Complete coma. Temperature 101°, pulse 40 to 50. Consent to operation was obtained.

Operation, October 5th. Chloroform. A semicircular flap with the apex just above the brain-line was dissected downward and the frontal bone exposed. A linear fracture one and one-half inches long was seen running in a vertical direction from left to right almost over the longitudinal sinus. There was no depression of bone. A one-inch trephine was applied just to the right of the median line, and on removing a button of bone an extradural blood-clot was seen alongside of the longitudinal sinus and evidently caused by a rupture of its wall. The opening was enlarged by rongeur (Lüer) forceps. On removing the clot the hemorrhage from the sinus started afresh, but was easily controlled by pressure. When the dura was exposed it was seen that there was no pulsation. As soon as the knife punctured this membrane a stream of turbid serum spurted out with considerable force. Two ounces of fluid escaped. Another blood-clot was found under the dura, and it was scraped away. The pia mater was then seen to be gray, cloudy, and without lustre, and was in astate of inflammation. Another trephine-opening for the sake of drainage was made over the left frontal eminence, and in this side there was also found both an extradural and intradural blood-clot. Irrigation with salt solution was employed. Horsehair-drains were inserted inside the dura through each opening. The scalp-flap was loosely fastened in place by a few sutures and strips of gauze inserted on each side. During the operation the pulse had risen from 38 to 85. The bacteriological examination of the fluid showed numerous colonies of streptococci and staphylococci.

6th. Coma not complete. He could be aroused, and he began to be delirious. Temperature 100° to 102°, pulse 86 to 100, respiration 24.

7th. Very noisy and delirious. Temperature 101° to 102½°, pulse 80 to 90, respiration 18.

During the first week after the operation he continued very noisy with almost constant delirium. Temperature 100° to 102°, pulse 75 to 80.

The wound was dressed on the fifth day, and the dressings found soaked with considerable serous discharge.

Second week (*October 12th to 19th*) there was but little change. Temperature ranged between 100° and 102°, pulse 80 to 100.

Third week (*October 20th to 27th*) there was a slight improvement. The temperature was lower—99½° to 101°. The pulse varied between 80 and 100. At times he talked intelligently, and would answer questions, though for the greater part of the time he was noisy and delirious.

Fourth and fifth weeks (*October 28th to November 12th*) improvement continued in his mental condition, but not in temperature. During the day he was comparatively quiet, though often irrational, and always noisy at night.

Sixth to eighth weeks (*November 12th to December 3d*) his mind gradually became clearer, he talked intelligently with his friends, and manifested interest in his surroundings. At night he was still restless. Temperature remained between 100° and 102°.

On *December 6th* he was out of bed, and soon began to move about the ward. His memory was not good, his mental movements were sluggish, and he was still occasionally irrational at night. After *December 11th* his temperature remained below 99½°.

On *December 24th* his fever had entirely disappeared. Appetite good. No headache. Wound completely healed. Discharged apparently cured. Two weeks later he returned to the hospital on a visit, and talked intelligently with the patients, and, while somewhat sluggish yet, he seemed comparatively well mentally and physically. For four months after he left the hospital he was entirely free from pain, fever, or sign of mental aberration. He was able to do light work, and seemed happy, though his wife noticed some loss of memory and occasional attacks of stupidity or indifference to his surroundings. About the first of April he began to complain of pain in the region of the right trephine-opening, and noticed a bulging outward of each opening. A few days later he felt sharp pain in his right eye, and also some pain on the left side of the frontal region. He also appeared rather stupid. He was readmitted to the hospital on *April 15, 1895*. He complained of severe pain in the right eye, over the right trephine-opening, where there was a pulsating swelling the size of a small egg. There were also a bulging of the left trephine-opening and some pain in the left eye. Pressure on the projecting masses increased the pain in his eye and produced dizziness. There was no paralysis of motion or sensation. The patient walked about the ward, and conversed intelligently, though his reasoning-power was slow in its action. He was not restless, but was rather torpid. Temperature 98½°, pulse 100, respiration 24.

Diagnosis, probable cerebral abscess.

16th. Temperature 99°, pulse 70 to 80. Pain less severe when he remained in bed.

17th. Temperature 99° to 99½°, pulse 80 to 96, respiration 20. Complains he cannot sleep.

18th. Patient walked over to the dispensary and back (quarter of a mile) for an examination of his eyes. Slight congestion of the right fundus was found. Temperature 99½°, pulse 80 to 90. Pain more severe. Vomited several times.

19th. Vomiting. Bulging through trephine-openings increased. Stupidity more marked. No paralysis. When spoken to answers questions intelligently. Special senses not affected. Pupils react regularly. Knee-reflexes lost.

20th. Operation. Chloroform-anæsthesia. A semilinear skin-flap was dissected from the frontal bone and

from the dura mater which bulged out of the trephine-opening, to which the flap was very adherent. The dura was much thickened. An aspirating-needle passed into the brain-substance drew out pus. The dura was incised around the upper margin of the right opening, and under it was found brain-tissue mixed with granulations. This was scraped away with a sharp spoon, and immediately a jet of thick greenish pus spurted out to the distance of two feet. The opening in the brain was enlarged, and the pus continued to flow until eight ounces had escaped. It was then seen that the bulging over the left trephine-opening had collapsed. The finger passed into the abscess-cavity found it lined with a smooth, uniform membrane which bled but slightly. The cavity was as large as a man's fist, and occupied apparently the entire frontal lobe on the right side, with the exception of a thin shell of cerebral tissue which formed its wall. The cavity also extended into the left frontal lobe. The dura was opened on this side, and the finger thrust through a thin layer of granulating cerebral tissue passed into the abscess-cavity. This was then gently washed out with boric-acid solution, and drained through each trephine-opening by a rubber tube and strips of gauze.

Before the operation, temperature 99½°, pulse 80. Two hours after operation temperature 102°, pulse 120.

21st. Temperature 100° to 102°, pulse 80 to 100, respiration 16 to 20. Free from pain. Mind brighter.

22d. Temperature 100° to 101°, pulse 90. No paralysis. No vomiting. Rather restless. Wound dressed.

23d. Temperature 100°, pulse 80 to 90. Takes more interest in surroundings. No pain.

24th to May 8th. Temperature 100° to 101°, pulse 80 to 100. Occasionally very restless. Takes nourishment. No paralysis. Hernia cerebri springing out of wound. Very little discharge.

9th to June 1st. Temperature 100°, pulse 90 to 110. Mental state more clouded. Some weakness. Occasional delirium. Gradual loss of strength. Hernia cerebri increases in size in spite of frequent clippings.

1st to 7th. Patient somnolent. Refuses food. Delirious at night. Decidedly weaker. Temperature 101°, pulse 88–100.

8th. Distinct change. Unconscious. Temperature 104½°, pulse 120, respiration 36. Labored breathing. Unable to swallow.

9th. Temperature 106°, pulse 120, respiration 40. Comatose. Died in the afternoon.

REPORT OF AUTOPSY BY DR. J. S. THACHER.

Brain. Abscess-cavity size of fist occupies most of right frontal lobe back to about one inch in front of fissure of Rolando. Wall in front is a thin membrane which becomes gradually reinforced with brain-tissue. The whole anterior part of the right hemisphere was enlarged at the expense of the right temporal lobe and of the left frontal lobe. On microscopical examination abscess-wall composed of granulation-tissue, simple inflammation. A few pea-sized spots of suppuration at tip of left frontal lobe.

Lungs. Consolidation of apex of lower lobe of left lung; other patches scattered through the upper and lower lobes. In right lung patches of pneumonia distributed as in left.

A CASE OF CONGENITAL OCCLUSION OF THE COLON AT THE ILEOCÆCAL VALVE.

BY CARL WEILAND, M.D.,
OF PHILADELPHIA.

As cases of congenital occlusion of the intestine are very rare, only two such cases in 111,451 patients having been recorded at the Vienna Foundling Hospital, according to E. Theremin,[1] it would seem of interest to put on record the following example of this hemiteratic anomaly:

On October 26, 1895, at 2 P.M., Mrs. Wr., primipara, aged thirty-four years, of Philadelphia, gave birth at full term to a boy of apparently perfect development. Nothing unusual was observed in the infant until October 27th, at 1 A.M., when the child began to vomit a darkish fluid which left only a light-colored stain on the clothing. As the child had been given some tea of a similar color it was supposed to be that; at any rate, no pathognomonic odor could be detected. This vomiting occurred on that day whenever the child was given some nourishment. As toward evening the bowels had not moved, in spite of a little piece of soap that had been put into the rectum, an injection of lukewarm water with a little soap was given, which returned immediately and brought small cylindrical masses of white mucus about 5 mm. in diameter. This, of course, aroused suspicion at once; but the next morning conclusive evidence of an internal pathological condition was furnished by the vomited matter, which now was distinctly fecal in odor and had the appearance of meconium. As the first thought was that of intussusception a soft-rubber catheter was introduced into the rectum, which could be pushed up about eight inches. Then the nates of the child, who was already very weak, were raised and plain lukewarm water was injected with a Davidson syringe. As the injection returned at once, the anus was gently compressed, and about two ounces of water were again injected. This procedure increased the vomiting of fecal matter very much, and so was stopped at once; but the vomiting continued, respiration became embarrassed, and soon the child died, about forty-eight hours after birth. One hour later Dr. U. W. Vollmer kindly assisted me in making the post-mortem examination, which showed the following condition of the intestinal tract:

The small intestine showed great vascular injection and was much distended with gas, especially near the ileocæcal valve. Here the diameter of this viscus was about 18 mm., the same as that of the caput cæcum, with which the small intestine was continuous, as the lower fold of the ileocæcal valve was absent or, rather, very little developed. The upper part, however, of this valve, the ileocolic fold, was developed too much, for it stretched across the whole lumen of the bowel and formed a complete septum between the colon on the one side and the cæcum with vermiform appendix and small intestine on the other side. There was not the slightest chance for a communication between these two parts. Below this anomalous diaphragm the cæcum and small intestine showed well-developed villi, and the entire mucous membrane was stained brown with biliary pigment and showed a small amount of

[1] Deutsche Zeitschrift für Chirurgie, 1877, Bd. viii.

meconium. Above the abnormal septum the large intestine was very much contracted, having a diameter of only 5 mm. It also had no ascending part, but the transverse colon turned back at once to the posterior aspect of the abdominal cavity and ran transversely as far as the usual position of the splenic flexure, where the descending colon commenced. The whole colon and rectum, about ten inches in length, contained only soft, white mucus, and not the slightest trace of meconium. Its surface looked white compared with the color of the small intestine, and its walls were thin, having apparently been arrested in its development.

The time when the septum must have formed we can fix, with great probability, as follows: As meconium appears in the intestine about the end of the fourth month of intrauterine life, and as no meconium was present in the large intestine, it is evident that the septum must have formed before the end of the fourth month. On the other hand, it is known that the transverse colon is developed at the third month, and the ascending colon at the fifth month, from which would follow that the large intestine of this case was arrested in its development at about the fourth month. If we further assume, as would seem justified, that both phenomena, the appearance of the septum and the arrest of development of the colon, had *one* underlying cause and occurred at the same time, we come to the probable conclusion that we had to deal with an infant born with a rudimentary colon and a total occlusion of the intestine which had formed at the fourth month of intrauterine life.

315 NORTH SIXTH ST.

FOREIGN BODIES IN THE EAR.

BY ROBERT BARCLAY, A.M., M.D.,
OF ST. LOUIS;
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THE circumstances and phenomena attending the presence of a foreign body within the external auditory canal are so many and so varied that the condition seems to present endless curious and instructive features. Three cases recently met with seem to possess such features sufficiently unique to entitle them to the consideration of the intelligent readers of THE MEDICAL NEWS, than whose columns can be found a no more lasting nor well-known nook for the preservation of clinical *memorabilia*.

"Invisible hairpin," broken, and caught within ear.—A rare case of ensnared aural foreign body is that of a lady, aged about forty years, who, while "picking" her left ear with a so-called "invisible hairpin," several hours before the consultation, had heard a sudden "twang" and sticking in the ear, as if the hairpin had broken. And so, indeed, it had done; for on the instant as she, startled, had attempted to jerk it quickly from the ear, the sharp extremity of the inner portion of its lower prong sprang away from its fellow, penetrated the soft tissues of the floor of the external auditory canal, and remained imbedded there; the separated end of this prong only coming away in her grasp. Every attempt on her part to remove the hairpin by traction on its projecting prong—she durst not force it *inward* for fear of wounding the drumhead—had served but to bury the point of the broken prong more deeply into the flesh of the canal, thereby increasing her suffering. Advised by her family physician not to delay, she forthwith sought advice and aid.

On examination, it was found that the lower prong of the "invisible hairpin" had broken at the outer end of its wavy portion, and seemed firmly imbedded in the floor of the auditory canal, now quite inflamed, at a point about one-third of its depth from the outlet of the canal. The loop or turn of the hairpin was about one-half inch from the flaccid portion of the drumhead; and together with the unbroken prong, it lay closely against the roof of the canal. Projecting from the meatus there was enough of this prong to be easily grasped between one's thumb and finger.

Removal of the hairpin was effected by first inserting within the meatus a Gruber speculum, encircling the unbroken projecting prong, and then raising the end of the broken one with a long-shanked aural hook, when the hairpin was readily withdrawn.

Under one or two applications of a vulnerary, the wound of the canal floor promptly healed.

Characteristic effects of bird-shot thrown into an upturned ear. CASE No. 103,672.—One morning as this young clerk, aged eighteen years, was lying upon his left side, facing the wall, his cousin, from a distance of seven feet, playfully pitched a few—say, ten or twelve—bird-shot onto his right ear and face. He felt shot enter the ear and deafen him temporarily; and on turning this right ear downward saw three shot roll out. There was now no pain nor tinnitus; but the ear felt stopped up, "a stuffiness, not a decided deafness," which "opened up whenever he swallowed." Slight headache came on toward evening, but disappeared during sleep. Upon awakening the following morning another shot rolled out of this ear. This settled his determination to consult his physician, who at once referred him to me.

On examination, his right drumhead was found a trifle congested, but otherwise normal.

A mild tympanic inflation, together with mercurial aperient, effected complete relief from his aural symptom.

Hard foreign body adherent to the drumhead. CASE No. 103,687.—A curious instance of foreign body upon the drumhead was that of a retired capitalist, an American, aged forty-six years, who for two weeks had suffered from deafness on the left side, with occasional tinnitus, but without earache. One month before he had had a severe attack of acute coryza, for which he had sniffed up some "Pond's extract of witchhazel," blowing his nose immediately thereafter. Upon development of his aural symptoms, of which pain was one at the onset, leeches had been applied about his auricle, and for two days, morning and evening, for about twenty minutes his ear had been douched with hot water.

At the time of our consultation he could hear with the affected ear a forty-eight-inch watch on contact only, and low voice and whisper at a distance of fifteen feet.

On examination of the left ear the vibrating portion of the drumhead appeared thickened, opaque, lustreless, and somewhat retracted; the flaccid portion and entire periphery much congested, and the short-process of the handle of the malleus barely recognizable. Just in front of the handle, however, was a dark body, resembling a dried blood-clot, but thicker. This was about three-sixteenths of an inch long, one-sixteenth inch in diameter,

apparently roughly cylindrical in form, and parallel to, and as if closely adherent to the handle of the malleus.

Removed with Sexton's foreign-body hooked curette, it proved to be a heavy, very hard, brownish-black mass. Its nature has not yet been determined, but it is supposed to be a coal-cinder.

After its removal the tympanum was inflated by Politzer's method, when testing proved the hearing for the forty-eight-inch watch to be as high as one-eighth of an inch.

He made a rapid recovery.

3211 Lucas Ave.

MEDICAL PROGRESS.

Syphilitic Gummata of the Heart.—During a recent meeting of the Montreal Medico-Chirurgical Society (*Montreal Med. Journ.*, vol. xxiv. p. 474) Dr. Finley presented the report of a case of syphilitic gummata of the heart and liver, and exhibited the pathological specimens showing the characteristic lesions.

Tetanus Treated with Antitoxin.—E. H. Howlett, F.R.C.S., reports (*Med. Chronicle*, vol. iv. p. 186) a case of tetanus in a lad of fourteen years, arising about two weeks after the receipt of gunshot-wounds in the legs. The repeated administration of antitetanic serum produced no immediate effect upon either the spasms or the general condition of the patient, but rapid improvement took place in the appearance of the wounds. Convalescence was established in twelve days.

Why is the Abdomen Opened in the Middle Line?—Dr. F. Winson Ramsay (*Lancet*, No. 3370, p. 1355) asks this pertinent question, and refers to the unanimity of operators in this selection. The usual reasons given for preference for the median incision are (1) less hemorrhage; (2) fewer important structures to encounter; and (3) easy access to all parts of the cavity. These Dr. Ramsay considers imaginary and really points of disadvantage. In the first place, the matter of hemorrhage, there is no reason to fear troublesome bleeding in any part of the abdominal wall, and if slight in the linea alba, it shows a lower vitality there, and hence a delayed or imperfect union may result. Secondly, the whole depth of the incision being through fibrous or tendinous tissue the young operator may enter the cavity unexpectedly, injuring its contents, and in closing the wound he will find difficulty in readjusting the several layers as accurately as if they were distinctly separated by muscular tissue, etc. Thirdly, the greater facility afforded in exploring all parts of the cavity is overestimated, and more than outweighed by the presence of the umbilicus immediately in the way when it becomes necessary to extend the incision upward. To render the umbilicus strictly aseptic is a difficult, if not impossible, task.

The writer suggests that abdominal section be made vertically through the rectus muscle on either side, and contends that here the operator will meet all of the advantages and encounter none of the disadvantages mentioned above. He has recently put it to a practical test in five operations, and is convinced that its advantages are not alone a matter of theory, but real.

Some of the Immediate Results Produced by Castration in Cases of Enlargement of the Prostate.—Dr. C. W. Munsell Moullin (*Lancet*, No. 3770, p. 1347) calls attention to an unexpected immediate effect following castration, to wit, the recovery of power to void the urine naturally ofttimes within the first few hours after the operation. Sometimes this has remained permanent, but usually there is a temporary relapse. He cites many cases illustrating this point, one of which was observed by Mr. Hunt, of Wolverhampton, wherein micturition was naturally performed two hours after the operation, and continued so for five days, when the use of the catheter had to be resumed. An item of especial interest in this case was a tonic spasm of the muscles about the anus, lasting for some time, quite the opposite having been their condition previous to the castration.

Clearly this rather astonishing result cannot be explained upon the ground of atrophic changes in the gland, even though they appear after six or eight days. Nor will the feature of rest in bed, etc., be counted as a factor, for in most instances this is part of the preparatory treatment. Prof. White accounts for this by early changes in the median lobe of the body, which is so prone to act as a valvular obstruction; but this is obviously faulty, for time enough has not elapsed for any real diminution in its size, although atrophic changes are known to begin in the organs within a very few days; and, further, such decrease in size, did it occur so early, should be permanent, which will not explain the period of relapse so common in the progress of these cases.

In the estimation of Dr. Moullin, the only reasonable explanation lies in the active stimulation produced by ligature of the spermatic plexus upon the vessel-walls, as well as the voluntary muscular tissue throughout the pelvis—as exemplified by Mr. Hunt's case cited above. The sudden and active stimulation of these nerve-trunks by ligation is certainly capable of producing just such results as have been observed, and their gradual subsidence will also coincide with the gradual adjustment of the injured nerves to the new conditions.

THERAPEUTIC NOTES.

Permanganate of Calcium.—Nardas (*Gaz. Méd. de Paris*) speaks of the superior power of oxidizing possessed by this substance. When brought in contact with organic matter it is at once resolved into manganese dioxide and lime, giving off oxygen. Experiments prove it to be superior to bichloride of mercury and quite free from toxic or caustic properties.

For Diphtheria—

R—Sodii sozoiodolat. . . . ℥jss.
Saccharin. . . . . gr. x.—M.
Fiat pulv.

S. A small quantity to be blown into the pharynx every four hours.

R—Sodii sozoiodolat. . . . ℥ss.
Sulphur. floris . . . . ℥j.
Saccharin. . . . . gr. x.—M.
Fiat pulv.

S. For insufflation.

—Schwarz, *Wiener klin. Woch.*

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THE STATUS OF THE MEDICAL ARM OF THE SERVICE IN CASE OF WAR.

HAPPILY the war-cloud has blown over. We draw a sigh of relief as we think of the ills that threatened us for the moment which, for the present at least, have vanished. War may mean glory and renown and countless heroes; it may also mean defeat and disgrace; it always means desolation, sorrow, and horrors unspeakable.

No one can have a keener conception of the force of these facts than the members of the medical profession, who, in their daily lives, see so much that requires nerve and patience and self-control. At the same time, should the country be imperilled and its existence threatened, there is no class of citizens which would be found more ready to make sacrifices, endure trials, and give their lives if necessary in its behalf.

How was it in the Civil War? The losses by death and disability in the medical corps were relatively greater than in any other arm of the service. On the field of battle the surgeons, although non-combatants, pressed toward the front, regardless of personal safety, and often lost their lives in the absorbing interest of the hour. The motive was not curiosity nor mere recklessness, but the desire to be where the need for their services was greatest. Others were worn out by the strain and fatigue of hospital service. We all know something of the tax which is sometimes imposed by hospital service in civil life; what must it be in time of war, with a hundred imperious demands upon a doctor's time and force at once? Those men who underwent such trying experiences were not mentioned in the reports for special bravery, medals and distinctions were seldom distributed among them, neither did they seek or expect them.

When we remember that at the close of the war there was scarcely a score of medical colleges in the country, that hospital experience prior to the war was limited to a mere handful of those who entered the service, that therapeutics, medical and surgical, was in its infancy compared with its present condition; when we consider, furthermore, the enormous numbers of sick and wounded successfully cared for, medical supplies obtained and distributed, and obstacles overcome in accomplishing these results, the magnitude of the work becomes apparent. To feel the touch of kinship with men of such achievements thrills one with joy and admiration.

The war-cloud has vanished; it is to be hoped it will not again appear above the horizon; if it should, there need be no question as to the loyalty and devotion of the medical corps.

But something more than these sentimental qualities would be required: skill in organizing hospitals, with their complicated equipment and supplies, profound knowledge of military hygiene, ability to organize means for the rapid and easy transportation of the sick and wounded, not alone to the field-hospital, but to the place where treatment, whatever its character may be, will be completed; in a word, all that pertains to the sanitary condition of marching and fighting men, or men in camp, usually grouped together in large bodies, are essential qualifications. That there should be skill and experience in the treatment of disease and injuries goes without saying. Nor is it to be forgotten that good sanitary regulations sometimes decide battles.

How does the present medical situation compare with that which confronted us in 1861? The material and intellectual development of the country during the past thirty years is an answer to the question. Instead of a few medical colleges, none of them of the first rank as we now understand it, we have probably twenty which, as well-equipped centres of

instruction, will compare favorably with similar institutions anywhere in the world. A very much larger number of lower grade colleges, while inferior in their opportunities and advantages, are serving a useful purpose as auxiliary to the others. Hospitals, where there was one at the close of the war there are now a hundred, and if there is anything of value in any hospital on earth that has not been tried in our principal hospitals East and South and West, it is because it has thus far been successfully concealed from inquisitive American eyes. With such colleges and hospitals, with opportunities for culture here ever broadening, and with opportunities for study abroad, of which thousands of the present generation of doctors have availed themselves, and with patriotism and loyalty to duty which are unquestionable, it is not to be doubted that with the first call to arms a medical corps could be quickly organized which would be ample as to quality and personnel for almost any conceivable requirement. Fortunately, too, the head of the medical department of the army at the present time not only reflects lustre upon the army and the country by his scientific achievements, but possesses executive capacity of a rare order, which would enable him to expand the service judiciously in case of need, and distribute to administrative posts the officers of tried experience, some of whom saw service in the Civil War. Of great assistance also would be the medical officers of the national guard, whose experience in the summer camp and whose systematic training of successive ambulance-corps have developed an organization of pronounced efficiency.

The transfer of duties and relations from civil to military life, with its discipline, its subordination to authority, and the other conditions incidental to the life of a soldier, would be found difficult and trying to many men of excellent capacity and great usefulness, who nevertheless chafe under restraint and routine regulations. We would suggest that in the curriculum of our medical colleges a very distinct period be allotted to the study of military surgery and the special duties which pertain to the military surgeon. It would also be well if some extension of the military system were applied to our hospital management, at least in the larger cities, where the hospitals would at once be required for military purposes, and from which the higher medical officers would probably be promptly drawn.

It may not be inappropriate to inquire as to the character of the work of the medical corps if war should occur. An interesting article bearing upon this phase of the subject has recently appeared from the pen of Sir William MacCormac. He speaks of the greater velocity and smaller size of the missiles now in use as necessarily effecting a change in the character of the wounds which would be received and require treatment in war. There would be more penetrating, fewer lacerated and bruising and crushing wounds. The wounds produced by these small missiles, if not instantly fatal, would have small openings of entrance and exit, and would be relatively difficult to treat. There would be fewer coarse wounds of bayonet and sabre, there would certainly be fewer gangrenous wounds, because of antiseptic treatment immediately and universally applied. There would be fewer wounded by whatever means, there would be more killed outright. The improvements in our ambulance-system, the existence of railroads at almost any point in this country, or in any other in which battles are likely to be fought, will greatly simplify the question of transportation of the wounded. If the terrible effectiveness of modern firearms will tend to shorten a war between two great powers because of the losses which one or both would sustain, equally true is it that the resources of modern scientific medicine would permit a larger percentage of the sick and wounded to be quickly restored to duty and effectiveness than at any previous period of history. What a striking contrast these two facts afford, superlative destructiveness on the one hand, superlative beneficence on the other.

WHAT DETERMINES THE LOCALIZATION OF DISEASE?

The accurate localization of disease has been the chief aim and study of the diagnostician during the last fifty years. And wonderful are the advances which its enthusiastic pursuit has led to. Such terms as "general debility," "asthenia," "phlogistic," "bilious," "sanguine," "lymphatic," "amaurosis," "rheum," "decline," etc., have almost disappeared from our vocabulary, and the gain both in clearness of our conceptions of disease and efficiency in combating it has been enormous. In our systems of medicine nowadays almost any disease, except the contagia and the diatheses, is referred to some special organ as the chief seat of its processes; but this wonderful progress has simply been gradually bringing us face to face with another problem behind all this, and of even

greater interest and practical importance, "What determines the localization of disease?" Is it some peculiarity in the organ affected itself, some special pressure of the environment upon it, or some disturbance of the general nutritive balance between all the organs of the body? Or is it some ancestral tendency of the organ or part which lies deeper than any of these? We have only reached the point as yet where we can ask these questions, not answer them, in most cases; but there is one field of research from which are beginning to come some highly interesting and valuable suggestions as to the possible nature of one class of causes of the localization of disease. And this is the rapidly developing department of evolutionary pathology.

From the point of view of this school there is a strong and growing tendency to regard many forms of morbid action as reversion to processes which were normal or physical in these tissues at an earlier stage of their ancestral development. For instance, calcareous degeneration is a "dropping back" to the simpler and easier processes of the coral-polyp or chalk-animalcule (*Globigerina*) stage of our development, fibroid change a sinking on the part of the cells involved to the sponge-level, cancer a "rebellion" of the glandular epithelium, involving a return to the anarchistic "every-cell-for-himself" hydroid stage, gout a falling of the lever and muscle cells in the avian or reptilian stage, in which uric acid is their normal product, etc. According to this suggested theory, any prolonged lowering of the nutrition or vitality of a part or of the entire system, whether from local causes, such as fibrotic arteries, or from general, such as underfeeding, excessive exposure, insufficient supply of oxygen, senile changes, etc., may be sufficient to set up one of these reversionary degenerations and thus account for a large class of disease.

But this cannot be further discussed here, as it is to another suggested factor in the causation or localization of disease we wish specially to call attention. And that is the "age," both embryonic and ancestral, of the organ attacked. It is an accepted rule in both biology and psychology that those parts or properties which are the last to appear in an organism are usually the first to disappear. The flowers of plants, the cells of the brain-cortex, the menstrual function in woman, the highest power of the intellect and imagination, and in a race the higher social virtues and graces, in famine or war, for instance, are illustrative cases. Now, while it is impossible to arrange all the organs of the human body in the exact order of their age or antiquity, yet there are several of them which are obviously much later in the embryologic development and thousands of generations more recent in ancestral history than the mass of the others.

Conspicuous among these are the uterus and mammary glands of the female and the lungs in both sexes. The rudiments of a stomach appear in the amœba, of a muscle-nerve apparatus in the hydra, and of a heart in the mollusc: but the whole invertebrate world with its myriad forms of life is traversed, and three or four of the widest strata of the vertebrate before the air-breathing lung appears in the amphibia. And the same order is followed in the embryo, even the gill-clefts, bars, and arteries putting in their appearance first as if to emphasize the thought what a mere parvenu the lung-sac is. The case of the uterus and milk-gland is even more marked, for the methods of parturition are such as to render both of them unnecessary right up to the very latest and smallest class of even the vertebrates, the mammalia. And by a singular coincidence all three of these organs are peculiarly subject to disease, and to a degree for which no adequate explanation has yet been advanced. Diseases of the lung, for instance, are responsible for one-fourth of the entire death-rate, more than double the proportion which can be attributed to any other single organ or even system, while the uterus and mammæ are the site of nearly 60 per cent. of all cases of cancer in the female.

In the case of the lungs, part of this extraordinary susceptibility may unquestionably be explained by the strain to which they are subjected by the sudden and frequent changes in their special environment—the atmosphere; but this can account for only a minor part, as some 65 per cent. of the lung death-rate (45 per cent. of the entire rate) is due to a single specific process—tuberculosis—which can hardly be attributed to exposure. The same is true of the uterus and mammæ, the overwhelming mass of whose fatality is caused by a special disease, carcinoma, in whose causation neither functional strain nor traumatic injury can play more than the slenderest part, popular and even professional superstition to the contrary notwithstanding.

Would not this peculiar morbidity of all three of these organs be best explained upon the principle of the general law already referred to, that late ap-

pearance means early decay, and that morphologic and ancestral weakness is usually accompanied or followed by premature functional senility? This, I think, can be almost demonstrated in the case of the uterus and mammæ, the vast majority of whose peculiar diseases develop only after their functional activity has ceased and they have become practically supernumerary organs, waste tissue in the body, which, like "dirt" elsewhere, is sure to breed disease.

ECHOES AND NEWS.

VON BRUNN, professor of anatomy in the University of Rostock, is dead.

THE *Lancet* has despatched a special correspondent to the seat of war in West Africa.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS will be held at Moscow from June 7 to 14, 1897.

THE ALBERTO-LEVY PRIZE of 50,000 francs has been awarded by the Paris Academy of Sciences to Professors Roux and Behring in equal parts.

DR. JOHN D. ROSS, of Williamsburg, Blair County, Pa., has just completed the sixtieth year of a continuous subscription to the *American Journal of the Medical Sciences* and to THE MEDICAL NEWS since its first issue. He is now in his ninetieth year, and still takes an active interest in medicine.

LUDWIG TEISCHMANN, formerly professor of anatomy at the University of Cracow, died recently at the age of seventy-three years. His name was generally known in association with hemin-crystals, of which he was the discoverer, and which have such profound significance in medical jurisprudence.

THE CHAMBER OF COMMERCE has been occupying itself with a study of light and air with the intent to restrict the skyward aspiration of buildings. In Berlin the height of buildings is limited to the width of the street; in Paris to about 50 per cent. over such width; in Chicago to 130 feet, and in Boston to two and a half times the width of the street.

THE explanation for the increase in the New York tax-rate, given by the Governor, shows that it was largely due to increased expenditures for new charitable purposes, including a very considerable item for the "new institutions ordered by the Legislature."

Perhaps if we would put some of the money that now goes into "homes" and asylums into school-houses we might have fewer paupers and lunatics to support.

IF it were the custom to erect a monument to a man in his lifetime for services to humanity, Dr. Hafikine of all men deserves one. After inoculating forty thousand persons for cholera in India at considerable personal expense he is returning to Europe shattered in health. It is doubtful if he will ever be able to expel from his system the Assam malaria which brought his noble experiments to a close. His inoculations reduced the death-rate materially.

ON the 15th of July last Dr. S. Moos, of Heidelberg, one of the founders and editors of the *Archives of Otology*, died on his sixty-fourth birthday. Rising from an obscure parentage, and battling with the most adverse circumstances and many difficulties, his heroic courage overcame all, and enabled him to write his name among the foremost scientists of his age. His writings have greatly enriched the literature of his specialty. In recognition of his merits his sovereign bestowed upon him the honorable title of counsellor.

THE recent election at the New York Academy of Medicine resulted in the election of Egbert H. Grandin, Vice-President; Joseph E. Janvrin, Trustee; Herman L. Collyer, member of Committee on Library, to serve four years; B. Farquhar Curtis, member of Committee on Library, to serve five years; Robert A. Murray, member of Committee on Admissions; William S. Gottheil, Reginald H. Sayre, Ralph L. Parsons, and Charles H. Richardson delegates to the Medical Society of the State of New York.

FROM the returns of the last census from the city of Paris, compiled by Dr. Bertillon, it appears that there are 2922 medical men residing in the capital, and of this number 521, or upward of one-sixth, are foreigners. The total number of foreigners living in Paris being 181,000, there are, consequently, 2.87, or in round figures 3, foreign physicians to 1000 foreigners, whereas there is only 1 (exactly 1.07) French physician to 1000 French inhabitants.

An examination of the table of professions shows that the practice of medicine attracts to the capital of France more foreigners than any other profession.

THE NEXT MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA has been appointed at Harrisburg, Pa., beginning Tuesday, May 19, 1896, and continuing for three days. The Committee on Scientific Business have issued a circular requesting that all papers offered shall be so condensed that they may be read in ten minutes, and that each discussion shall be limited to five minutes. The programme will be arranged as usual in the order in which applications may be received. The titles should be furnished the Chairman of this Committee as soon as possible, and not later than March 19th. The Chairman of the Committee is Dr. F. LeMoyne, Pittsburg, Pa., to whom all communications should be addressed.

THE Supreme Court of the German Empire has just pronounced sentence and ordered judgment in the following case: Dr. Max Böhm (Friedrichroda), a determined opponent of vaccination, some time ago was prosecuted for having certified to the successful vaccination by him of several children. The public prosecutor held that this vaccination was fictitious, inasmuch as a diluted lymph, incapable of conferring immunity, had been employed. The decision of the court at Gera, where the case was tried, was unfavorable to the defendant, but this judgment was reversed by the Supreme Court at Leipzig.

But the health authorities, instead of acquiescing in their defeat, again brought him up before the court at Gera on the same charge in May last. The court sentenced the defendant to two months' imprisonment. An appeal was again taken to the Supreme Court, but this time the judgment was sustained.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, January 2, 1896.

JOSEPH D. BRYANT, M.D., PRESIDENT, IN THE CHAIR.

INFANTILE INTUSSUSCEPTION. A STUDY OF 103 CASES TREATED EITHER BY ENEMATA OR LAPAROTOMY.

DR. FREDERICK HOLME WIGGIN read a paper with this title. He said that it was strange that at the close of the nineteenth century we should be still considering the comparative methods of treating intussusception which had been suggested many centuries ago—the method of intestinal distention by air or water and that of abdominal section. His attention had been first directed to this subject by a case of infantile intussusception coming under his own observation, and a search of the literature showed that this was very meagre in America and that it had received considerable attention in England. The importance of the subject was apparent when one considered that about 98 per cent. of the cases of infantile intussusception, if left to nature's care, terminate fatally.

At the outset one was met with the popular belief, shared by both physicians and the laity, that intestinal distention was a method which was both safe and, in many instances, successful, and that laparotomy in infants for the relief of this condition was uniformly fatal. If this opinion were founded in fact, of course there could be no choice of methods. To answer this grave question and to determine which method was the better, if each possessed certain real advantages, was the task which the author had set for himself, and he had begun his work by carefully collecting from English and American literature the histories of 103 cases of infantile intussusception. A study of these cases formed the basis of the present paper, but only a few illustrative cases were read, the remainder being intended solely for reference.

Dr. Williams has recorded in the *Lancet* for 1894 a case of intussusception occurring in an infant of eight months, seen on the first day of the trouble. After inversion combined with enemata and insufflation had failed to reduce the invagination, it was decided to try the effect of generating carbonic acid gas within the intestine. This was done by first giving an enema consisting of eight ounces of water in which was dissolved a drachm and a half of citric acid, and following this by an enema of eight ounces of a solution containing two drachms of bicarbonate of sodium. After holding the nates together for a few minutes, the tumor could no longer be felt, and the vomiting ceased. The patient made a good recovery. Among the cases unsuccessfully treated by enemata was one reported by Dr. F. Taylor and Mr. Golding-Bird. An intussusception of the ileocæcal variety was found in an infant of eight months, coming under observation on the first day. A tumor could be made out, and blood and mucus were passed by rectum. The tumor apparently disappeared after insufflation of air, but it returned some hours later, and then, under chloroform-narcosis, inflation was unsuccessfully tried again under increased pressure. The child died shortly afterward, and the necropsy showed that the invagination had not been reduced, but that an injection of water was capable of reducing the ileum, leaving the colon inverted. The latter proved to be gangrenous, and the injection at the necropsy caused several ruptures of the peritoneal and muscular coats.

Mr. Mortimer had reported in the *Lancet* for 1891 a case of intussusception occurring in an infant of eight months, coming under observation on the fourth day. The child was on the verge of collapse, but after stimulation two small enemata were given, and after the second one the tumor could not be felt. Opiates were given, and for two days there were some pain and increasing abdominal distention. The tumor then reappeared, and under chloroform, and with the reservoir raised three feet, several fluid enemata were given before the tumor partially disappeared. On each of the two following days a pint of water was injected at a lower pressure. The child died, and the necropsy showed three ruptures in the descending colon.

Dr. Edward Deansley recorded in the *Lancet* for 1894 a case of intussusception occurring in an infant of seven months, seen five days after the bowel had begun to protrude from the anus. Just prior to admission the symptoms had been aggravated by the mother giving castor oil. Under an anæsthetic an enema of one pint of water with an elevation of two feet was given, and this caused the disappearance of the tumor. The child was kept under opiates until the next day, and on the evening of that day the bowel again protruded and the vomiting returned. Reduction was again effected under chloroform, and also on the following day by the same method as at first. Twenty-four hours later the child died, and at the necropsy it was found that although the invagination was still unreduced, its reduction could have been easily effected by laparotomy.

In a case of intussusception occurring in an infant of three months, and reported by Mr. J. D. Mortimer, it was supposed that reduction had been produced by insufflation, but some hours later the child died in collapse, and the necropsy showed the invagination still present. It was then ascertained that with an enema under a water-pressure of two feet all of the invagination could be reduced except about one inch of the ileum, together with the cæcum and appendix. Only a little more reduction was produced by increasing the pressure to three or four feet, and in a few minutes the colon ruptured in three places. It was worthy of note, however, that the invagination was very readily reduced by manipulation from below. The reader of the paper then referred to some experiments of Mr. Mole on infantile cadavers, and quoted his conclusions from these experiments as follows: (1) That no harm can be done healthy intestine by enemata of fluids under a moderate pressure; (2) that hydrostatic pressure is more uniform, and, therefore, less likely to cause rupture of the bowel; and (3) that the part most likely to be injured by overdistention is the transverse colon.

Out of the 103 cases of infantile intussusception presented in this paper nearly 50 per cent. occurred during the fourth, fifth, and sixth months in nearly equal proportions; 75.4 per cent. were in males, and 89 per cent. were ileocæcal. The probable causal relation of external violence was then referred to, and Pritchard and A. Jacobi quoted in support of this view. It seemed prob-

able that the careless handling of infants and particularly the violent jumping of the little ones up and down to quiet their crying were responsible for many cases of intussusception.

As regards the symptomatology of the cases collected, nothing especially noteworthy had been observed. The disorder had manifested itself by sudden and severe abdominal pain, vomiting, bloody stools, and, in most cases, by the presence of an abdominal tumor. It should be noted that the presence of this tumor would have been overlooked in some instances had not conjoined abdominal and rectal palpation been employed. A protruding tumor at the anus was noted in 5 per cent. of the cases. A spontaneous cure by sloughing was observed in only 2 of the cases. Of the 39 cases treated only by inflation or enemata, or both, 16 recovered, giving a mortality of 59 per cent. In the 16 successful cases various methods were employed. In one case 9 enemata were necessary to reduce the invagination permanently; in 3 chloroform-narcosis was employed. The average hour at which treatment was begun was the forty-first, whereas in the 23 unsuccessful cases the average hour was the sixty-ninth. In reality, 72 cases were treated by intestinal distention, but some of these were afterward subjected to laparotomy. Of the 72 cases reduction was not secured in 54, or 75 per cent., and this represents the mortality of this method of treatment had not other means been subsequently employed.

Various experimenters, the speaker said, had shown that there was little risk of injuring a healthy infantile intestine by injecting fluid under a hydrostatic pressure of six pounds to the square inch, but when the gut is constricted the conditions are very different, even when the disorder has lasted only a few hours. Battey and Mole have proved by experiment that water under moderate pressure can be made to pass the ileocæcal valve when no obstruction is present, and Mole has shown that if 1½ pints of water are injected under a pressure of 1⅓ pounds to the square inch into an infantile colon, the intestine will be fully distended and the fluid will pass the valve. The author said that while he could not bring himself to favor treatment of infantile intussusception by enemata or inflation after having studied this series of cases, still, if one desired to resort to intestinal distention, at least 1½ pints of tepid saline solution should be placed in a reservoir elevated not more than three feet, and injected into the bowel. If one trial of this method did not reduce the invagination, the method should be at once abandoned. If reduction has apparently taken place, the child should be kept quiet by other means than opiates or motion, for the opiates tend to mask the symptoms indicative of a return of the invagination. The author then quoted the expressed views of a number of well-known surgeons to emphasize still further what the cases presented in the paper taught, viz., that intestinal distention was uncertain, unreliable, and dangerous.

Turning next to a consideration of the cases treated by laparotomy, it was shown that of the 64 cases so treated 43 had terminated fatally, thus giving a mortality of 67.2 per cent. In the successful cases the average age of the patients was 6½ months; in the fatal cases it was 5 months. In the successful cases the operation had been done on an average at the forty-fourth hour from the onset of the acute trouble; in the fatal ones, the operation had not been done until the one hundred and second hour. If the cases in which the bowel was incised or excised were excluded, there would remain 45 cases, 24 of which were fatal. This would reduce the mortality to 53.4 per cent; but even this the author did not consider represented the risk from this treatment at the present time, owing to improvements in the technique of intestinal surgery. On this account he would exclude all cases occurring prior to 1890, which would leave 18 cases of infantile intussusception treated by laparotomy, with 4 deaths, or a mortality of 22.2 per cent.

As regards the treatment itself, he said that it was foolish to operate on a child in collapse; it should first be stimulated until reaction had set in. Only a very short incision was necessary. The best method of reducing the invagination was by encircling the tumor below its apex by the finger and thumb, while the intussuscipiens or sheath is held a few inches lower down, and the apex of the tumor pushed upward without making any traction from above the tumor. If it should happen in the future that after doing a laparotomy it was found that the invagination was irreducible, the best method of meeting this formidable complication, in his opinion, was by the method devised by the late Prof. H. Widenham Maunsell. It should be remembered that acute intussusception was really a form of strangulated hernia; that the subacute variety was like an irreducible hernia; and that by laparotomy performed within the first forty-eight hours 78 per cent. of the cases should recover.

DR. A. JACOBI said that the reported cases were exceedingly few in proportion to the number of cases that must have occurred. Invagination of the intestine was more apt to occur in infants than in older subjects, both on account of the looser attachment of the mesentery and the greater exposure of this region of the body to external violence. He considered the condition largely a preventable one. Thus many of these children, it would be found, had suffered for a long time previously from constipation or diarrhœa. In the former case, the straining incident to having a stool was, in all probability, an exciting cause of intussusception under certain circumstances; while in the case of protracted diarrhœa, the deeper tissues of the bowel becoming involved in the disease-process, localized peritonitis and spots of thickening are produced. Regarding treatment, the speaker expressed his belief that if enemata, correctly employed, failed to effect reduction in the course of a few hours, a surgeon should be summoned. He had come to the conclusion that it was not only safer, but better, not to employ a greater water-pressure than one to one and a half feet. With such moderate pressure a larger quantity of fluid could be introduced into the intestine. He had always been in the habit of prescribing opiates for children immediately after reduction of the invagination had been effected, in order to keep them quiet. In one reported case in which the invagination recurred many times, he was of the opinion that this might have been prevented by the use of opiates.

DR. B. FARQUHAR CURTIS said that in 1887 he had collected some statistics regarding intussusception, which showed that in the case of both infants and adults the mortality was 76 per cent. Additional and more recent statistics had reduced this rate to 58 per cent. He

thought we would be doing very well if we saved one child in two or three. He did not think there had been such a change in the technique of the operation in the last few years to account for this reduction in the mortality; it was more probably due to an earlier resort to operation. It was well to remember that this was a class of cases in which it was eminently wise to call in the surgeon at an early stage, for counsel if not for operation. Where there was an acute onset, the operation should not be delayed. It was hardly fair to convey the impression that laparotomy was not followed by a recurrence of the invagination—that this was only seen after intestinal distention—for a number of such cases of recurrence have been recorded as following laparotomy. An enema, in his opinion, should be tried only once in these cases of infantile intussusception, and should be administered under an anæsthetic, and with a "head" not exceeding three feet. Where laparotomy was indicated, it should be performed very quickly, through a very short incision, and the reduction of the invagination effected within the abdomen.

DR. J. LEWIS SMITH said that in differentiating between the stools of dysentery and those of intussusception it should be remembered that after the first few hours all fecal matter was absent from the stools in cases of intussusception. He had successfully employed both inflation and fluid enemata in the treatment of infantile intussusception, but had been convinced of the greater efficacy of the latter. In his experience there had not been a previous history of chronic diarrhœa in cases of intussusception occurring in infants between six months and one year old.

DR. R. VAN SANTVOORD said that as some believed that infantile colic was really a form of mild and transitory intussusception, the importance of promptly treating this condition, and by the careful use of opiates or other measures controlling the movements of the bowel, became manifest.

DR. WIGGIN, in closing the discussion, said that he had objected to the use of opium in these cases chiefly on account of it masking the early symptoms indicating that there had been a return of the invagination. He would again emphasize and contrast the time at which the successful and unsuccessful cases treated by intestinal distention had come under observation, as indicating the great danger of delay. The same observation applied with equal force to the laparotomy-cases reported. A very short incision was all that was necessary. He did not think that in infants laparotomy had often been followed by a recurrence.

THE LOUISVILLE CLINICAL SOCIETY.

BY W. H. WATHEN, M.D., LL.D.

OVARIAN CYSTOMA.

CASE I.—A year ago a doctor consulted me about a woman who had an abdominal enlargement which he had diagnosticated an ovarian tumor, but the history was peculiar, in that she claimed the tumor had several times nearly disappeared. Six months ago she came to the city to see me, and I diagnosticated an ovarian cystoma, and recommended an operation. She repeated to me the history of the case, claiming that the tumor had almost entirely disappeared upon several occasions, and now claims that it has nearly disappeared once since she consulted me.

I operated ten days ago and found a multilocular ovarian cystoma, containing more than three gallons of liquid in all the loculi, with extensive adhesions to the anterior abdominal wall. The only interesting feature in the case is that this is a positive illustration of the fact that we cannot rely upon the statement of our patients in regard to the progress of any form of tumor, because we all know that this tumor could never have disappeared or have become lessened, and it was only in the imagination of the patient that it did so. I have had one case where a large tumor did disappear and return, but that was a parovarian cyst, unilocular, with thin walls, which evidently ruptured; the contents being bland, were absorbed into the system and eliminated through the excretory organs. The tumor returned afterward, and fifteen years subsequent to the rupture was removed by me, and weighed fifty pounds.

INTRALIGAMENTOUS MYOMA.

CASE II.—The second specimen is a uterine myoma, removed two weeks ago from a lady who had noticed the presence of a tumor for two or three years, and for a year had suffered with intense pain from its presence. Examination revealed the fact that the tumor was firmly fixed in the pelvis, almost immovably so; the diagnosis of intraligamentous or retroperitoneal myoma was made. Believing that the tumor might be removed by the vagina by morcellation, though the vagina was very small, the woman never having given birth to a child, the vagina was prepared for a vaginal hysterectomy, and at the same time the abdomen for an abdominal hysterectomy. After the woman was under the anæsthetic an examination convinced me that it would be unwise to try to remove the tumor through the vagina, and that it would be best to deal with it from above; but, as the uterine arteries could be ligated without difficulty from below, I ligated both arteries through the vagina. I then opened the abdomen and found that the tumor was so firmly wedged into the pelvis that it could not with strong vulsellum forceps be carried up more than half an inch. The tumor, which has shrunken since being put in alcohol, was large enough to fill the pelvis to the walls upon each side, and was an intraligamentous myoma arising from the lower and anterior part of the body of the uterus at its junction with the cervix. There were no broad ligaments, properly speaking, but the ovaries and tubes were well above upon each side, so that I was able to throw a ligature around the ovarian arteries. Then an incision was made around the entire mass, about one and one-half inches from the top of the tumor, and the tumor and uterus enucleated, the uterus being divided at its junction with the cervix. When the enucleation was completed there was a large cup-shaped cavity extending down to the vagina, and outward to the pelvic wall. The capsule was preserved, and the best way to treat the case was manifestly after the fashion of Senn, which consists in stitching the capsule in the lower part of the abdominal incision, then tamponing it with iodoform-gauze. This was done and the wound closed. The woman was very nervous, with a bad heart; her pulse was exceedingly rapid during the operation, and remained from 120 to 160 for five days, not from shock of the operation, but from the generally enfeebled con-

dition of her system. She has improved continuously, and is now sitting up.

SUSPENSIO-UTERI BY VENTRAL FIXATION.

CASE III.—The next specimens were removed from two women; operation practically the same in each case, but not for exactly the same purpose. A lady from Galesburg, Ill., single, aged twenty-five years, consulted me last fall for the purpose of getting me to remove her uterus, she having been under the treatment of many doctors and deriving no benefit. She had become almost a confirmed invalid, suffering intensely during her menstrual periods, but never free from pain, and practically unable to do anything. I found she had a high fever, which could not result from her pelvic trouble, and sent her home. The case proved to be one of typhoid fever, and she finally recovered. She returned to the city recently, and upon examination I found her uterus completely retroflexed and wedged down in the pelvis, with tenderness in the ovarian and tubal regions, and some enlargement. I operated upon her through the abdomen, bringing the uterus, tubes, and ovaries from their retroplaced position, and found the normal structure of both ovaries entirely destroyed. Both ovaries and tubes were removed and the uterus fixed to the abdominal wall by silk sutures upon each side, which united each cornu of the uterus to the peritoneum, the knotted ends of the sutures being buried in subperitoneal fat. Then another suture was introduced through the abdominal walls and the fundus of the uterus and tied externally. The peritoneum was scarified so that adhesion would be more perfect. The woman has had none of her nervous trouble since, and the uterus is firmly fixed.

CASE IV.—The other specimens were removed from a woman in this city. She also had a retroflexed uterus which could not be returned to its normal position and held there by a pessary, as I had tested this method for a long while. The ovarian and tubal regions were exceedingly tender; she suffered from dysmenorrhœa, and there was always pain in the pelvic region. I could detect no enlargement of the ovaries or tubes. In fact, the pain she suffered, while it was severe and while she insisted upon an operation, was not sufficient in itself alone to demand the operation; but she had for many years suffered from a facial eruption which at times disfigured her so much that she had felt unless she could be cured she would rather die than live. And she believed that the continuance of the eruption was largely due to the trouble with her womb or with her ovaries and tubes, and that the eruption was worse during her periods of pain, etc. After having talked about the operation for two years she, with the approval of her mother, determined that it should be performed, and I consented to do so. This patient had been treated by several of our best skin specialists in the city, including Drs. Bloom, Orendorf, and others. She had also consulted Dr. Mathews concerning some rectal trouble. I operated upon her after the same fashion as in the previous case, removing both ovaries and tubes, which were found to be not so badly diseased as in the other case, but considerably diseased—enough so to cause intense pain during menstruation and more or less pain at all times. She has made a good recovery; the eruption is decidedly better. What will be the permanent result of course the future will have to decide. The operation was performed three weeks ago. I must say that the operation was performed more with the hope of benefiting the eruption than for the purpose of curing her of pain, though the pain was severe.

FIBRO-SARCOMA OF VAGINAL WALL.

CASE V.—About six months ago Dr. Weidner called me in consultation to see a woman pregnant in about eight months. There was a tumor in the left vaginal wall just below the uterus about as large as a turkey's egg. We did nothing, and the woman gave birth to the child, as I understand, without serious trouble. The tumor remained, not enlarging appreciably. Some weeks ago she insisted upon having it removed, and Dr. Weidner referred her to me. She was taken to the Kentucky School of Medicine Hospital and we removed the tumor by dividing the vaginal wall and enucleating it. The tumor had the appearance of being a fibroid. Dr. Weidner has since examined the specimen and pronounces it a fibro-sarcoma, and reports that he thinks there is a recurrence of the trouble. This specimen is interesting in view of the fact that we have very few solid tumors connected with the vagina, and especially few malignant tumors, unless they be carcinomata, extending to the vagina from the uterus or the vulva.

DISCUSSION.

DR. J. M. MATHEWS: I wish only to refer to the fourth case Dr. Wathen has spoken of. If the members were as familiar with the case as I am, I know they would all regard it as an extremely interesting one. As far back as six years ago the young lady was referred to me with the most violent eczema of the face that I have ever seen, and in her own good way—she is much above the average in intelligence and is connected with a very nice family—she said she believed that the eczema was due to her rectum; that she had difficulty in having an action of the bowels; that she was thoroughly constipated; had to strain at stool, etc., but great stress was put upon the violent eczema of the face. This was distressing, much more so than Dr. Wathen has mentioned. At night the itching was so intense that she would scratch the blood out of her face; she could not sleep, and being a young girl she was diffident about going into society, because, as Dr. Wathen has stated, of the terrible appearance that she presented. But she told me she could put up with that were it not for the torment she passed through, especially at night. To give her some relief, thinking perhaps it might be due to neurotic influences, that she might be correct in thinking the rectum had something to do with it, I chloroformed her and divulsed the sphincter muscle, hoping by that method to relieve some reflex process and to re-establish normal action of the bowel, etc., but signally failed. She consulted me on several occasions for prescriptions for her constipation, etc., but in the interim I referred her to Dr. Bloom, who treated her how long I do not know. I saw her during the whole time up to perhaps a year ago semi-occasionally, being interested in the patient obtaining permanent relief if possible. She consulted many physicians, not only here but abroad, in New York, etc., going through various forms of treatment without much benefit. I

always believed it was neurotic; where the source of irritation was I, of course, am unable to say. Happening in the St. Joseph Infirmary operating-room recently a patient was wheeled in by Dr. Wathen's assistants, and I recognized this girl. I was so much impressed, not knowing that she was going to have a laparotomy performed, or that she had any trouble with the abdomen, by the kindness of Dr. Wathen I witnessed the operation, and went so far as to say to him that I hoped he would find disease of the ovaries or tubes, the removal of which would result in benefit, as she had been in torment for years. I stepped into her room this afternoon; she has made a perfect recovery from the operation, and told me that her face had given her no trouble since the operation was performed, three weeks ago. If it does succeed in clearing up this terrible eczema, it will open a subject for discussion. It has been the most persistent case that I have ever seen, and I only hope that the operation may prove of benefit.

DR. CARL WEIDNER: I will only speak concerning the last case reported by Dr. Wathen—the growth removed from the vaginal wall. Upon examination the specimen proved to be a sarcoma of rather large cell, being of the spindle-cell variety. The reason I think there is going to be a recurrence of the trouble is because I have examined the patient and find a rather swollen, tender condition, and some irregular excrescences about the line of the incision; second, the nature of the trouble; third, the continued debilitated state of the woman. She has not regained strength, and is suffering more or less pain locally and in the back. The case has been interesting, if for no other reason than the facility with which delivery was accomplished, considering the presence of the growth in the vagina at the time. I anticipated considerable trouble during labor, and this is one reason why I called Dr. Wathen to see the case. I waited for the occurrence with a great deal of anxiety, and after repeated failures was summoned hurriedly one day, and when I reached the house the child was born, the mother having had comparatively little trouble. However, it was a very small child.

DR. P. GUNTERMANN asked why Dr. Wathen removed the ovaries and tubes in two cases reported, stitching the uterus to the abdominal walls, when disease of the uterus had been diagnosticated. He understood the doctor to say it was a very simple matter to take out the uterus either from below or above, but in this case he had removed the ovaries and tubes and left the diseased uterus stitched to the abdominal wall.

DR. LOUIS FRANK: The second case Dr. Wathen reports is to me the most interesting in the series. This tumor seems to spring from the upper portion of the uterus. Tumors springing from the lower lateral part of the uterus, as a rule, burrow between the broad ligaments retroperitoneally, and those springing from the upper portion of the uterus grow outward in the direction of least resistance. This tumor must have begun at least between the folds of the ligament, probably just below where the tube enters the uterus.

As to the method of treating wound-cavities after removal of this sort of tumor of the uterus, I think by stitching up the sac which we have left, as has been recommended by some authorities, the denuded surface draining through the vagina, as could very readily have been done in this case, we secure the most rapid convalescence. It might also have been advisable to remove the remainder of the cervix, as the uterine arteries had already been ligated. Whether this would have simplified the after-treatment of the case I do not know. I would like to ask Dr. Wathen, in closing the discussion, to state whether there was much hemorrhage during the operation. If not, then the rapid pulse might be accounted for by the fact that we frequently have, if a fibroid tumor has existed for a great length of time, fatty degeneration of the heart. This, in connection with the operative procedure, and the shock which we know results to the nervous system, would probably account for the rapidity of the pulse subsequent to the operation.

In the next case reported, the connection between the ovarian disease and skin-lesion is an interesting one. It would be interesting to know the exact condition which existed in the ovaries. I rather question, however, though I confess I know little concerning skin-diseases, that there could be any connection whatsoever between ovarian disease, or disease anywhere, and eczema. We know that eczema sometimes persists for years. I have seen cases of facial eczema persist for such a length of time that the face assumed an appearance simulating leprosy—the so-called *facies leonis*—from the extreme induration and thickening of the skin.

DR. I. N. BLOOM: Referring to the fourth case reported by Dr. Wathen: Ten years ago this month a young lady came to me suffering from a very severe eczema of the face, also with acne; the two at times appeared together. When the eczema was most marked the acne was less so, and *vice versa*. During the four months that she was under my care, at times she improved to such an extent that I thought her ultimate recovery was assured; but an exacerbation would occur. The young lady became considerably discouraged; and at the end of four months, as she was not cured, decided to try someone else, and applied to my friend, Dr. McGuire, who reported, at the end of a months' treatment, that she was wonderfully improved; then she had another exacerbation. She continued under Dr. McGuire's treatment, however, until he left the city. It seems that some time afterward she applied to Dr. Mathews for treatment, as he has stated, with no better results, as far as the eczema was concerned. She then seems to have passed into the hands of Dr. Wathen, who is the first operator in the world, I believe, to perform a laparotomy for the cure of eczema. If he is successful, he will have established a new method for curing one of the most persistent and obstinate diseases that we are called upon to treat. The time (three weeks) is rather short. It is not at all surprising that, after having had a laparotomy performed upon her, the patient should not complain of itching of the face; but three weeks is too short a time to demonstrate the cure of eczema. Four months would be considered a short time in which to effect a cure of the disease when as long standing as in this case—ten years. At the time this patient was under my care she had absolutely no symptoms referable to disease of the sexual organs. I took occasion to make careful inquiry into her history, and studied every feature very thoroughly. I remember the case as distinctly as if it had occurred but yesterday—more distinctly, in fact, because I utterly failed to cure the eczema; and, as I have stated, at that time there were

no symptoms referable to the reproductive organs. I propose to ask the doctor why he thinks the operation that has been performed will effect a cure of the eczema. I would like to have had him dwell a little longer upon the disease of the ovaries which he found. Dr. Mathews spoke particularly of the disease of one ovary, and the reporter mentioned that the ovaries *were diseased*, but less so than the preceding case, with a similar condition of the uterus. I would like to ask the doctor whether the disease of the ovaries, when brought to view, was sufficient to call for their removal, or whether the retroflexion of the uterus was sufficient to demand an operation as severe as the one he performed. The case is an interesting one, but is not entirely unique.

I regret to say that I have under my care at the present time a young lady with an exactly similar condition of affairs. I have been treating her six months, and the course of treatment has been the same as employed ten years ago in the case Dr. Wathen has reported. Had I known that Dr. Wathen was to operate upon the case I would have brought a letter received two or three days ago, which would serve to illustrate a few points. The young lady that I am now treating has exactly the same condition of affairs; she is a robust, healthy girl; good surroundings, fairly well educated. She has a severe facial eczema accompanied by intense itching. Improvement at times has been marked, and encouraged by that she has continued treatment, although there have been periods of exacerbation when the case would appear altogether hopeless. Her last letter, received yesterday, states that she is greatly improved, and asks whether she shall come to see me at her regular time. This young lady, accompanied by her brother, has visited me once each month for six or eight months. I have inquired into her history thoroughly, and there is absolutely no symptom referable to the uterus or any other organ. The stomach and intestines are most frequently affected in these cases, not the sexual organs. She says if her face were well she would be as healthy as it is possible for anyone to be. In another case exactly similar to the two preceding, in which I am glad to say I had a more fortunate termination, the trouble had existed for a great many years and was thought by some who had seen it to be leprosy. In referring the case to me Dr. Dugan sent me a few hastily written lines, at the end of which he asked, "Is this leprosy?" A complete cure resulted under three months' treatment, the case being one of simple eczema.

DR. J. M. MATHEWS: I would like to ask Dr. Bloom if the neurotic element plays any part in the development of eczema.

DR. I. N. BLOOM: I do not know what is meant by the neurotic element. If you mean the reflexes, I should say it is extremely rare, and I doubt if it ever has any great influence.

DR. J. M. MATHEWS: In other words, suppose there is a tendency on the part of a patient to eczema, perhaps very slight—is it not a fact that the neurotic element will so increase that disease as to make it permanent? If there is disease, be it eczema or whatever you may choose to call it, and there is a local source of irritation, I do not care where it is, in the bowels, in the uterus, or in the ovaries, is it not true if you have a local seat of irritation, that this, through the neurotic tendency, will increase the eczema to such a degree as to make it a persistent affection so long as you have the local source of irritation?

DR. I. N. BLOOM: Anything that diminishes the vitality of a person, such as diseases of any kind, would naturally tend to delay the cure of eczema; but I maintain that it is not through any neurotic element, but simply an impaired vitality. Consequently, if stomach-trouble of a chronic nature developed during the course of an eczema or previous to it, the eczema would probably be rendered worse thereby. If I were treating such a patient, I would endeavor to cure the stomach-trouble as quickly as possible, just as I would cure acne or any other disease where it was coincident with eczema; at the same time I would say that one is entirely independent of the other. Eczema perhaps more frequently than otherwise affects strong, robust, healthy persons, which would be a point against the influence of any form of reflex action.

DR. W. H. WATHEN: Dr. Bloom, in his answer to Dr. Mathews' inquiry, has stated the main reasons why I consented to remove the ovaries in the fourth case I reported. Here was a woman who believed for a long while, so she reports, that the eczema has been made worse and continued largely because of her menstrual functions being interfered with, and the pain which she has suffered.[1] This woman has had since I have known her imperfect nutrition, and I am reasonably sure from a rather extended experience in operating for the removal of ovaries that her general nutrition will be very much improved.

Knowing that to be true, then, from Dr. Bloom's own statement, her local condition upon the face would be more amenable to the ordinary treatment for eczema. The case has positively shown that it has resisted the efforts of all the dermatologists who have treated her, and that the condition is not amenable to the treatment they have pursued, unless something be done to improve her nutrition. The operation for removal of the ovaries was not performed for the purpose of curing the eczema, nor was she promised that she would be benefited, but was discouraged against having the ovaries removed at all; and was finally only told that it might benefit her by improving her general nutrition. But this woman had enough disease about the pelvis to justify a laparotomy independent of eczema; and the operation of laparotomy and anterior fixation of the uterus, where it is retroplaced and cannot be returned and held in position by a pessary, is one that is so well recognized that no intelligent laparotomist would take issue at all. In this case, then, the operation was justifiable for the purpose of fastening the uterus to the abdominal wall, and I did not know when I began operating that I would remove the ovaries, thinking that probably much or most of the pelvic irritation and painful menstruation was due to the retroplaced uterus, but when the ovaries were exposed, and one of them found considerably diseased and the other not healthy, as she had insisted upon the removal of the ovaries, and when Dr. Mathews, who was present, insisted that they ought to be removed, because she would never want to marry, they were removed. I do not know with what this woman suffered ten years ago, because I had no opportunity of ascertaining.

[1] If that be true, then the removal of these structures ought to act beneficially upon the condition with which she has suffered.

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ORIGINAL ARTICLES.

THE DIAGNOSIS OF CHANGES IN THE SIZE, POSITION, AND MOTILITY OF THE STOMACH IN CASES WHERE INTRAGASTRIC INSTRUMENTS CANNOT BE USED.

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IT was only twenty years ago, in 1875, that Ewald[1] by accident discovered that a soft, flexible tube could be introduced into the stomach without a stylet. Since then the use of this instrument has been very widely extended. When in 1885 the writer took his first lessons in lavage under Oser, in Vienna, it seemed almost a novelty there, and was very rarely employed in the United States; but it has been more and more popularized, until now in some quarters it has possibly come to be abused, especially by patients who have learned to wash out their own stomachs.

There are many cases of gastric disease in which, for one reason or another, we cannot employ even the soft tube, and still less the sound, or any of its ingenious modifications and amplifications, such as Einhorn's gastrodiaphane or Turck's gyromele. The contraindications are given by the leading authorities, and include especially all cases of acute illness, recent hemorrhages from any part, gastric ulcer as a rule, most serious diseases in their last stages, congestion of the brain, and advanced age. It needs to be remembered, however, that age for this purpose should be reckoned by the condition of the heart and bloodvessels, rather than by years. I have had patients eighty years of age who took the tube with less inconvenience than many do at forty.

Then, besides the contraindications, we are obliged to take into account the foolish dread which many nervous patients have of this trifling procedure, amounting sometimes to an insuperable obstacle. In my long experience with chronic invalids in Atlantic City, the most frequented health-resort in America, I have found that only a small proportion of patients of the better class who need special treatment will consent to the use of a stomach-tube, at least until their diseases have progressed to a serious stage.

Therefore, in order to reach as accurate a diagnosis as possible in such cases, I have been obliged to make the most of the various methods which do not include the employment of any instrument inside the stomach. Trusting that the mode of systematizing such methods which has proved useful in my own work may be helpful to others, I venture to submit a description of it.

In thus pointing out what can be done when necessary without the tube, there is no thought of underestimating the enormous advantages which that little instrument affords in the diagnosis and treatment of gastric disease. In studying the chemical functions of the stomach the tube is virtually indispensable, though occasionally accidental vomiting at the right time gives an opportunity for making the necessary chemical tests; and the Einhorn bucket may sometimes serve us a good turn.

It would require too much space to go into a discussion of symptomatology and the now somewhat promising results of the chemical and microscopical examination of the urine and blood. That these latter researches are capable of throwing much light upon the affections of the stomach as well as of those of the intestines there is no longer any question.

We come then at once to the examination of the abdomen externally. Not stopping here to consider what can be learned from inspection and palpation, as to the usefulness and great value of which no question has ever been raised, we pass on to a study of clapotement and percussion. It is to the value of the combined employment of these two procedures, according to a certain order, that I desire to call attention especially. Both are separately well described in the works of Ewald,[2] Boas,[3] and other standard treatises on diseases of the stomach, and during recent years there have been numerous contributions to current medical literature on abdominal percussion. The most notable of these is a paper by Dehio,[4] in which he gives directions for percussing with the patient lying on the back, as well as standing, after drinking various portions of water. He states that the normal empty stomach is entirely within the thorax, and not accessible to percussion, but that the drinking of one-quarter of a litre of water produces in the erect position a dull area, which extends 11½ cm. below the lower end of the corpus sterni; then by drinking the same quantity a second time, the dulness is extended 2.7 cm. further downward, and so on until after the person has taken a whole litre he finds in the ma-

jority of cases the lower border of stomach-dulness a few centimetres above the level of the umbilicus. He points out also that from the different degrees of distensibility thus indicated we may infer much as to the motility of the stomach.

On the other hand, Jaschtschenko,[5] at about the same time, took quite the opposite view of the matter. He sharply criticises Traube, whose conclusions were similar to those of Dehio above cited, and declares that the empty stomach is percussible, and that filling it gradually with water causes an extension of the dulness upward but not downward. Neither of these two writers makes any mention of clapotement.

Obrastrow,[6] of Kiel, writing on this subject in 1888 an elaborate and valuable paper which I had not seen till the present article had been nearly finished, gave a full exposition of clapotement, but had not at that time as much faith in the accuracy of the information to be obtained by a delicate percussion as he has evidently since acquired, judging by an able contribution which has just appeared from his pen.[7]

Rose,[8] an American physician, has also recently written on the subject of the splash.

Certain it is that even the normally small healthy stomach under usual conditions, when empty as well as full, presents a portion of its anterior surface in contact with the front wall of the thorax, and to a small extent with the front wall of the abdomen; and except in conditions of marked obesity it is not generally very difficult to determine both the upper and lower borders of that portion in contact. But stomachs which are thus almost entirely covered by the ribs are rare, at least in civilized communities, and physicians are seldom called upon to prescribe for them.

Physicians are most interested in abnormal stomachs, which nearly always extend far enough below the ribs to afford us the opportunity of testing their condition by all the usual methods of physical exploration.

My own experience has convinced me that stomachs, like noses, may vary considerably in size, and yet be within normal limits, but that when they extend, in the empty condition, much lower than a point midway between the sternum and umbilicus, they are generally pathological. That experience includes the examination of about 300 persons by the methods now under consideration. Two hundred and twenty-five of these were examined in the course of my practice in Atlantic City and the remainder in the Polyclinic of the Augusta Hospital in Berlin during the present winter, through the courtesy of Professor Ewald and his chief assistant, Dr. L. Kuttner. By the kindness also of Dr. Oesterreicher, pathologist at the same hospital, I have been permitted to witness numerous autopsies in the cases of persons who had had various forms of gastric disease as well as a few whose stomachs were normal as to their size and position.

At some future time I may summarize the results of these observations and of others yet to be made in a more general way, and deduce from them some of the lessons which they teach; but it is sufficient for the object of this article to show that they confirm the value of clapotement and percussion.

In a number of the cases in Ewald's clinic in which, by external examination, I had diagnosticated and designated by chalk-lines on the abdomen, gross departures from the normal in the way of displacement, dilatation, or both, the stomach was afterward inflated by air, and in some instances illuminated by the electric lamp from within, with a substantial verification of the results previously obtained. In two noteworthy instances while by percussion the boundaries were correctly determined, the splash obtained by clapotement told an entirely different story, and thus led at first to some doubt. But as exceptions are said to "prove the rule," so these two exceptional cases have been unusually instructive. Both were cases of downward displacement and dilatation. In one of them the entire stomach had fallen until the fundus rested firmly upon the pelvic organs; in the other the pyloric end, greatly dilated, occupied the same position, while the cardiac portion was still in its normal place. Percussion in various positions with the stomach first empty and afterward partly filled, gave the above results, and distending the organ with air was fully confirmatory; but the splash, even after one or two glasses of water had been drunk, could not be heard at any point below the navel in either case. Usually with the patient lying on the back the splash is heard at the nethermost part of the stomach when obtainable at all.

The practical inference to be drawn from this observation is, that if in any case clapotement and percussion do not agree in their testimony, we should be guided by the latter rather than the former, as being less likely to deceive, though until this recent experience I was inclined to the contrary view. When clapotement and the results of intelligent, careful percussion agree, we need have no doubt. When, as rarely happens, they disagree and the case is important, it will be well to inflate either the stomach or colon to settle the point. Experiments were made by me in a series of six cases of gastrectasia in Ewald's clinic with a view to ascertain whether by clapotement and percussion together it is possible to determine positively when the stomach has emptied itself. The patients reported in the morning fasting. In each of these cases when the splash was obtainable and percussion in the erect position demonstrated dulness in the

lower segment of the stomach, I was able afterward by means of the tube to bring up a considerable quantity of the undigested remnants of a previous meal. Then after carefully emptying the stomach by aspiration the former tests were again employed, and this time with negative results.

In a number of other (doubtful) cases that were required to present themselves in the morning fasting the presence of fluid in the stomach was suspected, and to determine the question I practised clapotement and percussion, but failed to obtain a splash, or to detect dulness over the lower part of the gastric area in the erect position. The tube was then used, but nothing obtained, except three or four grammes of a pale, thin solution, consisting mostly of saliva.

In this simple manner, therefore, we may test the motility of any given stomach frequently, at various intervals after various kinds of meals, with very little difficulty or inconvenience to the patient, especially after the boundaries have once been accurately determined.

Numerous experiments have also been made by me to determine whether the stomach fills upward or sinks lower after the taking of food or drink in successive portions. The results have been somewhat various, as might be expected, according to the muscular energy of the stomach tested. In the cases of gastrectasia and all cases of weak motility, there has been a depression of the lower border after each glass of water, except when it was already at the lowest point attainable, and then there was a demonstrable widening of the organ on either side. Since beginning this particular investigation I have unfortunately not been able to find many normal stomachs, but the few presumably healthy ones examined filled upward without the lower border as a rule showing any noticeable depression after drinking several successive glasses of water, thus confirming the observation of Jaschtschenko rather than those of Dehio and Taube. In some cases, however, in which there were no other signs of weakness, the area of dulness increased both upward and downward after drinking.

It is best to examine the patient at a time when the stomach should be entirely empty—that is, in the morning fasting or six hours at least after the last meal. But this is not always practicable, and after a light breakfast or a very moderate lunch a healthy stomach will usually be found by the tests of clapotement and percussion to have voided its contents into the intestine at the end of two hours. Even when these tests show that gastric digestion is still incomplete, we may in many cases nevertheless satisfy ourselves with sufficient accuracy as to the size, position, and motility of the organ; but in cases of difficulty or obscurity it is safest to examine a second time under the best possible conditions.

If upon examining a patient six hours at least after his last meal we obtain the splash by clapotement, we can infer deficient motility. Noting at the same time the lowest point where the splash can be distinctly heard, we may infer as a rule that the lower boundary extends to about that level.

We should then percuss the abdomen with the patient in various positions to verify the results of clapotement and map out the boundaries.

If no splash should be obtained, before proceeding to administer water it is well to percuss with the patient first recumbent, and afterward in the erect posture, to determine the apparent stomach-boundaries while the viscus is still empty. Note these mentally or mark them on the body.

Then have the patient drink ⅛ to ¼ litre of water, and try again to obtain the splash. If it is obtained distinctly after the smaller amount of water mentioned, it raises a question as to the motility, and will also show where to percuss with especial care and delicacy for the lower border.

For the adept in percussion the fingers may suffice to bring out the finer differences in tone, but with a good percussor and pleximeter the task is greatly simplified.

The cut of a new pleximeter devised by myself will be found below. It is wholly made of rubber of medium hardness and is very easily carried in the pocket. The smaller end serves ordinarily as the handle, but in mapping out spaces very accurately or in percussing in narrow spaces, as between the ribs or over the clavicle, especially in children, it is better to reverse the ends and percuss over the smaller part.

Any one of the rubber-tipped percussors usually found in the instrument-stores can be used satisfactorily with this pleximeter.*

Having already made out the apparent boundaries with the stomach empty, we percuss again with it partly filled while the patient stands, or, in the case of persons who are in bed or very weak, sitting upright will usually suffice to bring the fluid contents in contact with the front wall of the abdomen and thus develop a zone of dulness. In going over a new case in this way it is best to give one glass of water at a time, when, if the stomach is atonic, the

* The above cut was published in THE MEDICAL NEWS of July 13, 1895, with a few lines descriptive of it, but is reproduced here because of its importance in connection with the subject-matter of this paper.—B. R.

area of dulness usually extends downward with each successive glass; but if entirely strong, it extends upward only or mainly.

One can begin either above or below, and should then percuss carefully in the median, left parasternal, and mammillary lines from the level of the nipple to the pubes in any doubtful case. Having determined the highest and lowest points of the anterior thoracic and abdominal surface with which the stomach is in contact, we should percuss perpendicularly across the oblique curved line joining these points and forming the left lateral boundary of this epigastric area. Then the right lateral boundary separating the stomach from the ascending colon should be made out in like manner. With the patient erect and the stomach well filled, this is usually a simple matter, the ascending and descending colons and their flexures nearly always emitting a more or less tympanitic note, even when partly filled. If the precaution has been taken to have the colon previously emptied, the contrast with the dull note over the full stomach will be, of course, still more marked. Having the patient lie first on one side and then on the other during the percussion may help to clear up a doubtful question. Filling the colon with air by the double-bulb rubber syringe in the usual manner will emphasize strongly the contrast with the dull stomach-area in the erect position, and filling the colon with tepid water while the patient is recumbent reverses the contrast in a very striking manner, though this is not a feasible undertaking with all patients, since some cannot retain the liquid long enough.

The determination of the upper border or stomach-lung boundary is the most difficult part of the procedure. Usually, however, by trying alternately light and strong percussion, there will be obtained a marked difference in the two qualities of the resonant tone, that over the stomach being more tympanitic. Still it requires much practice to make this out quickly and positively. Occasionally in exceptional cases where the stomach contains very little gas, we may fail at one examination and succeed readily at a second one. This line is sometimes more easily determined after a meal, since then such gases as are present are forced to the upper part and produce more tympany. One needs to bear in mind such possible disturbing factors as a greatly enlarged spleen or enlarged left lobe of the liver; also left-sided pleurisy filling up the half-moon-shaped space of Traube with exudation.

However, there is only one condition at all frequent which is likely to prevent us entirely from determining the boundaries of the stomach by the combination of procedures we have been describing, and that is extreme obesity with great thickening of the anterior abdominal wall. Fortunately, however, this is a condition which does not often coexist with any serious form of gastric disease.

To recapitulate, the following nine different kinds of stomachs can usually be differentiated by this combination of methods:

1. Stomach of normal size, in normal position, and having sufficient motor power.

2. Stomach normal as to size and position, but weak in motility. Gastric atony.

3. Stomach enlarged, but motor power strong. Megalogastrie of Ewald.[9]

4. Stomach enlarged and motility weak. Dilatation or gastrectasia.

5. Stomach wholly displaced downward, but otherwise normal. Not enlarged. Gastroptosis of Glenard.

6. Stomach both enlarged and displaced downward as a whole, but not dilated. Motility good. Megalogastrie with gastroptosis.

7. Stomach wholly displaced downward and dilated. Weak motility. Gastroptosis with gastrectasia.

8. Pyloric end of the stomach displaced downward and swung around to the left, but without dilatation. Often the pylorus is carried down almost, if not quite, into the long axis of the fundus, producing what has been called by Meinert[10], Kellogg,[11] and others the vertical or subvertical stomach, according to the degree of the displacement. This form may be appropriately called pyloroptosis.

9. Pyloric end of the stomach displaced as in No. 8, and also dilated. Pyloroptosis with dilatation.

These several varieties of stomachs may be recognized as follows:

1. Normal stomach. If empty, no splash will be obtainable until after the viscus has been partly filled, and then either none or a feeble one heard, not lower, as a rule, than midway between the lower end of the sternum and the umbilicus—exceptionally to within three cm. of the umbilicus. Percussion, especially with the patient standing after drinking water, will demonstrate the boundaries in normal place.

2. Atonic stomach. The findings will be the same, except that a splash may possibly be heard four to six hours or longer after a full meal, or, if not, the drinking of a very small quantity of water will develop it decidedly. Percussion will show delayed emptying of the organ.

3. Megalogastrie. Upper border will be found in the normal situation. Lower border may be at the level of the umbilicus or even below, but motility good. No splash obtainable six hours or longer after a full meal.

4 Gastrectasia. Splash usually obtainable six hours or longer after a meal and in bad cases at

any time during the twenty-four hours. Percussion shows enlargement of the organ and delay in emptying itself.

5. Gastroptosis. Splash usually rather more easily obtainable than in the normal condition and at a lower level, often at the navel or even considerably below it. Percussion shows descent of both upper and lower boundaries, but no enlargement.

6. Megalogastrie with gastroptosis. Same as in No. 5, except that percussion shows the upper boundary not so much displaced, or if so, then the lower border still further below its normal line. Percussion shows enlargement.

7. Gastroptosis with gastrectasia. Same as No. 6, except that the splash is obtainable too long after taking food or drink. Clapotement and percussion show abnormal delay also in emptying the stomach.

8. Pyloroptosis. Splash obtained usually far below the level of the normal lower border. Percussion reveals the peculiar outlines of the vertical stomach with the pyloric end low in the abdominal cavity.

9. Pyloroptosis with dilatation. Same as in No. 8, except that the splash is usually more pronounced and may be found too long after food or drink. Percussion shows also a widening of the pyloric end of the stomach.

In any of the foregoing cases it may be necessary to inflate the stomach with carbonic acid gas, supposing it to be impracticable to use the tube, or to inflate the colon with air from below.

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CONSANGUINEOUS MARRIAGE AS A FACTOR IN THE CAUSE OF DISEASE.[1]

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ACCORDING to the old Levitical law, a man was not allowed to marry a near relative. It was an abomination to the Lord, and if afflictions appeared among the offspring of such marriages, such as blindness, deaf-mutism, idiocy, or physical deformity of any kind, naturally it was looked upon as a direct result of the breaking of this law and a visitation of Divine wrath. However much hereditary and other influences had to do with these abnormalities, consanguinity was ascribed as the cause.

As a result, we doubtless have statistics which attribute disease to this cause much more frequently than the facts warrant; *e. g.*, in a table by Dr. Manning, in three cases in which brother and sister married, there were seventeen children, of whom nine were idiotic, or about 53 per cent. Some would attribute this to consanguinity, but we find that the parents were simple-minded, so heredity partly accounts for the idiocy independent of the consanguinity. The same author mentions twelve families in which the parents were not related, but one or both of whom were either insane themselves or had near relatives insane. In these families there were forty-four children, twenty-six of whom, or 59 per cent., were idiotic.

So in many cases there may be other factors than consanguinity. Many people are inclined to accept, without question or investigation, consanguinity as the cause of nearly all the afflictions which befall the offspring of such marriages.

Scientific men, however, without intending in the *least* to be sacrilegious, are apt to investigate more thoroughly these cases and see if they cannot be explained by natural laws, and there are a number who think, with Mr. Alfred Huth, "that consanguineous marriages, by the mere fact of consanguinity and irrespective of any inheritance, are not injurious to offspring."

In the consideration of this subject, heredity, which plays a most important part, must be considered. We know beyond the question of a doubt that some families have an hereditary tendency or predisposition to certain diseases, such as gout, cancer, tuberculosis, insanity, deaf-mutism, etc.[2] And a "great variety of traits, physical and mental, are of every-day observance as existing in unusual degree in certain families, such as superior or inferior stature, corpulence or leanness, extraordinary

[1] Read before the Medical Society of the District of Columbia, November 6, 1895.

[2] S. S. Herrick, M.D., in the Reference Handbook.

muscular strength, loquacity, precocity in mental or bodily development or tardiness in the same, left-handedness, grace of movement or oddities of gesture. While some families are characterized for such virtues as business integrity, truthfulness, temperance, and frugality, others are equally marked for dishonesty, mendacity, drunkenness, and prodigality."

Now, if two persons marry who have inherited similar characteristics, these characteristics are undoubtedly not only handed down, but are apt to be augmented in the offspring, as we find abundantly illustrated among animals in which distinct breeds are created by the careful selection and mating of animals which have the peculiar traits desired.

This being admitted, we would then naturally expect to find among children of consanguineous marriages the family peculiarities greatly intensified or augmented, whether it be of mind or body, of health or disease. So as a factor in the cause of disease where there is a family predisposition to tuberculosis, cancer, insanity, idiocy, deaf-mutism, blindness, or any other deformity, consanguineous marriage would undoubtedly augment that predisposition, and as near relatives are apt to possess a number of similar defects, such marriage would result in the greater tendency to disease. As a result of atavism or reversion, some trouble may develop which has been latent during many generations.

Then heredity alone should be sufficient reason to prevent two persons with similar hereditary weaknesses from marrying.

In the discussion of this subject two questions arise: First. When there is an hereditary predisposition to a certain disease on both sides, is disease any more apt to occur in the offspring of parents who are related than in those who are not? Second. When there is no hereditary disease of any kind on either side, is the disease liable to occur simply as a result of consanguinity? In other words, is consanguinity of itself a cause of disease? Quite a number of scientific men of to-day deny that it is, holding that the apparent cases are really results of heredity, syphilis, or inebriety.

However, there are many cases of disease among the offspring of consanguineous marriages in which there is no history of syphilis, inebriety, or hereditary tendencies whatever, and where there is nothing to which we can ascribe the disease except consanguinity.

For example, in my own practice I have recently seen two families suffering with retinitis pigmentosa, in which the parents were healthy, but were first-cousins.

There was no history of eye-trouble in either family or of syphilis or inebriety.

In the first family the parents and grandparents were first-cousins. There were three sons and one daughter nearly blind with the disease and three sons and one daughter with good vision.

In the second family the parents were first-cousins with no hereditary diseases whatever. There were four daughters and one son suffering from retinitis pigmentosa, and three sons and one daughter with good eyes; one child died in infancy. Supposing that this infant had good eyes, the result would be exactly 50 per cent. in each family suffering with the disease.

When retinitis pigmentosa occurs it is so frequently found among the offspring of consanguineous marriages that nearly every author of a work on ophthalmology speaks of it as the most common cause. In ninety-five cases of retinitis pigmentosa reported by Liebreich in which the parentage was traced forty-three were of consanguineous origin, or 45 per cent. In twenty-one cases seen by Dr. Frinzel eight were of consanguineous parentage, or 38 per cent.

The following are quotations from well-known authors as to the cause of retinitis pigmentosa:

"In almost a third of the cases the disease occurs in individuals descended from consanguineous parents. Herein apparently lies the explanation of the fact that pigmentary degeneration of the retina is so frequently associated with other congenital anomalies, since these latter also occur as a result of the consanguinity of the parents."—*Fuchs.*

"The disease is markedly hereditary. In numbers of instances consanguinity of the parents of the patient has been found; indeed, the disease has been attributed to this alone. Hereditary syphilis has been given as a possible cause of retinitis pigmentosa, but this has not been proven. The affection is found among deaf-mutes, idiots, epileptics, and in this sense is connected with morbid states of the nervous system. Very often no cause can be assigned. The disease is either congenital or begins in childhood."—*De Schweinitz.*

"It is said to be one of the results of intermarriage of near relatives. This, however, is probably true only in the sense that in any case of in and-in breeding the tendency to reproduce family peculiarities is much strengthened."—*Norris and Oliver.*

"Retinitis pigmentosa appears to have some obscure connection with morbid states of the nervous system. It occurs as Liebreich first pointed out—very frequently in the offspring of marriages of consanguinity. It has been thought to be connected with inherited syphilis, but the evidence on the subject scarcely supports the theory."—*Gowers.*

"It is undoubtedly strongly heritable, and many high authorities believe that it is really produced by consanguinity of marriage, either between the parents or near ancestors of the affected persons."—*Nettleship.*

"Retinitis pigmentosa often affects more than one member of a family, the patients being frequently defective in intelligence or deaf and dumb. Many of them are the offspring of marriages of consanguinity, and in others an inherited syphilitic taint is present, while in others no cause can be assigned."—*Swanzy.*

"The etiology of this disease is not known; it often appears in several members of the same family, as if it were hereditary, and sometimes is coincident with

idiocy or deaf-mutism. A certain number of children affected with this disease are the offspring of consanguineous marriages; others seem to be the subjects of hereditary syphilis."—*Meyer.*

"Retinitis pigmentosa is said to be most commonly met with among the offspring of persons nearly related to one another; but this can hardly be the cause of the disease among the natives of India, as they are scrupulous in observing the restrictions they place upon the intermarriage of relatives; yet we have seen a considerable number of instances of this disease among native patients. It is common to find this affection in several members of the same family."—*Macnamara.*

"It is found in families, and intermarriage of kindred has been considered greatly instrumental in its production. Leber finds about 25 per cent. of the cases within this category. Dr. Chazarain, of Bordeaux, says, in a very able paper, 'On the Marriage of Consanguinity and Deaf and Dumbness,' which is generally supposed to be one of the most constant defects resulting from such a marriage: 'M. Boudin informs us that deaf-mutes are the issue of consanguineous marriages in the proportion of 28 per cent. at the Paris Imperial Institution, 25 per cent. at Lyons, and 30 per cent. at Bordeaux, and that as regards the Jews of Berlin twenty-seven in ten thousand are deaf-mutes, while the proportion is only six in ten thousand among the Christian population in that city;' and apparently, therefore, with great justice, he concludes that the hypothesis of the pretended harmlessness of consanguineous marriages is contradicted by the most evident and well-authenticated facts."—*Noyes.*

Statistics on Deaf-mutism, by Holger Mygind, M.D., Copenhagen, 1894, allow the deduction that in 13,469 total marriages 697 deaf-mutes were born of consanguineous marriages—5.17 per cent.; and, furthermore, that of congenital deaf-mutes in a total of 6903 marriages 759 were born of consanguineous marriages—10.9 per cent. If consanguinity has any effect in the production of deaf-mutism, we would expect to find it more especially among congenital cases; so we do find, according to the above statistics, the percentage in such cases doubled.

Mygge has subjected all the statistics that had appeared up to 1879 to a most critical examination, and came to the conclusion that the issue of consanguineous marriages were absolutely more exposed to idiocy, insanity, and other physiological defects than other persons. He found while in Denmark consanguineous marriages may be supposed to represent three-fourths per cent. of all marriages, 6.75 per cent. of the deaf-mutes admitted into the Royal Deaf and Dumb Institution at Copenhagen, between 1858 and 1877 (altogether 477), were the result of such marriages. If the congenital deaf-mutes were considered alone, then 7.55 per cent. were from consanguineous marriages.

Among 553 Danish deaf-mutes only 3.3 per cent. of those with acquired deaf-mutism were born of consanguineous marriages, while this was the case with 14.6 per cent. of the congenital cases.

The Irish statistics proved that the closer the degree of relationship between the parents the larger was the number of deaf-mute children born. This is confirmed in the Danish deaf-mutes. One marriage between aunt and nephew produced three deaf-mutes. Four marriages between uncle and niece produced eleven deaf-mutes. Twenty-six marriages between first-cousins produced thirty-eight deaf-mutes. Sixteen marriages between second-cousins produced twenty deaf-mutes. Forty-seven marriages between blood-relatives produced seventy-two deaf-mutes.

Wilhelmi could find hereditary influences in only two of eighteen consanguineous marriages with deaf-mute children, and Mygge in only two out of fifteen.

Dr. Bemiss gives an account of 833 marriages between relations in which he finds the following results: In ten cases of incest with parents, or between brother and sister, 93 per cent. of the offspring were defective. In twelve marriages with niece or aunt 75 per cent. were defective. In fifty-six marriages between blood-relations, the issue of blood-relations, 53 per cent. were defective. In twenty-seven marriages between double first-cousins 27 per cent. were defective. In one hundred and twelve marriages between second-cousins 13 per cent. were defective; while in 125 marriages between persons in no way related only 2 per cent. were defective.

From close in-and-in-breeding of animals we find physical and mental degeneration and often deformity. I know of a lady who raised six generations of canary-birds without crossing. In the last brood of four birds one was healthy, while three had their legs growing from their backs and their wings were where their feet should have been.

In a paper by E. F. Brush, he quotes Darwin as saying: "With respect to pigs, there is more unanimity among breeders on the evil effects of close inter-breeding than, perhaps, in regard to any other large animal." Mr. Druce, a great and successful breeder of the improved Oxfordshire (a crossed race) writes: Without change of males of a different tribe, but of the same breed, constitution cannot be preserved. Lord Western was the first importer of a Neapolitan boar and sow; from this pair he bred in-and-in until the breed was in danger of becoming extinct, a sure result, as Mr. Sidney remarks, of in-and-in breeding. Darwin further relates that a Mr. Wright, a well-known breeder, bred a family of pigs in-and-in for seven generations; the number of pigs was reduced at each gestation, and of the offspring thus produced many were idiotic, without sense even to suck, and when attempting to move could not walk straight, until finally one sow was the sole offspring; she would not become pregnant by her sire, while to a stranger in blood she bred at the first trial.

These investigations certainly indicate that consanguinity of itself is a cause of disease, and that

hereditary diseases are much augmented by such marriages.

In an address to the deaf, by Alexander Graham Bell, he says:

"The laws of heredity seem to indicate that a consanguineous marriage increases or intensifies in the offspring whatever peculiarities exist in the family. If the family is characterized by the large proportion of persons who enjoy health and live to old age with unimpaired faculties, then a consanguineous marriage in such a family would probably be beneficial, by increasing and intensifying these desirable characteristics in the offspring. On the other hand, if the large proportion of the family betray weakness of constitution—for example, if many of the children die in infancy and a large proportion of the others suffer from ill health, only a few living to old age with impaired faculties—then a consanguineous marriage in such a family would probably be hurtful to the offspring. A large proportion of the children would probably die in infancy, and the survivors be subject to some form of constitutional weakness."

As there are few families entirely free from constitutional defects of some kind, a prudent person would do well to avoid a consanguineous marriage in any case, not necessarily on account of deafness, but on account of the danger of weakening the constitution of the offspring. Remoteness of blood is eminently favorable to the production of vigorous offspring, and those deaf persons who have many relatives deaf would greatly diminish their liability to have deaf offspring by marrying persons very remote in blood from themselves.

Children, I think, tend to revert to the type of the common ancestors of their parents. If the nearest *common* ancestors are very far back in the line of ancestry, the children tend to revert to the common type of the race. Deafness and other defects would be most likely to disappear from the family by marriage with a person of different nationality.

THE DIAGNOSIS AND TREATMENT OF GOUT.

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IN a previous paper we dwelt very extensively upon the theory and distribution of gout. Interesting though it may be to theorize as to its cause, the practical outcome of such study should be the recognition of the disease in its various forms and the application of a proper plan of management. The subject naturally divides itself into the diagnosis of acute attacks of gout and of the gouty diathesis, constitution, habit, or whatever else we choose to call it.

Acute gout arising for the first time in a comparatively young person can very easily be overlooked by us in this country because it is not at all common in our experience. The points to be considered are the time of the attack, the location of the pain, its character, the nature of the inflammation, and the fact that the inflammation is followed by desquamation of the cuticle. The attack usually occurs without previous foreboding in the early hours of the morning. The pain, located, as a rule, in the metatarso-phalangeal joint of the great toe, is very severe in character. The tissues of the joint will be acutely inflamed, swollen, and intensely congested. Accompanying the attack there will be a slight rise in temperature, which increases slightly after the attack has lasted a while. Toward the afternoon of the following day the fever subsides and the pain is a good deal relieved, but the symptoms recur the next night, and the attack goes on in this way often from five to eight days, gradually wearing off. The inflammation may involve the great toe of the opposite foot or other joints. Now there occurs what will confirm our diagnosis, and that is the desquamation of the epidermis of the part inflamed. The term "suppressed gout" is applied to a series of symptoms not typical of gout, but which occur in a person subject to gout, and which from strong *negative and positive* evidence we suppose to be gouty in origin. These attacks of suppressed gout are worthy our close study because they must occur sometimes in our practice, and can so easily be overlooked. They may immediately follow an attack of acute gout, or replace an attack. The patient may have severe vomiting, pain, diarrhœa, and profound depression, or there may be cardiac failure, manifested by dyspnœa, irregular action of the heart, and pain referred to the heart or to the left shoulder. We should remember that these attacks of so-called suppressed gout may occur independently or replace an attack of acute articular gout. Here it is that a great difficulty of diagnosis occurs, and the best that we can do is to keep this in mind as the possible cause when we see obscure, severe, and often fatal cardiac attacks accompanied by extreme dyspnœa, with failure of the heart's action in force and rhythm. Our training in this country leads us to attribute all these cases to uræmia, and we go so far as to classify cases in which there is an absence of albumin in the urine and many other of the typical signs of kidney-disease. It would seem that at least a few of these cases were cases of suppressed gout.

Nor is the diagnosis of the gouty diathesis easy or one upon which all observers will agree in every individual case. Just what the condition is from is also a matter of discussion, but that there is such a condition is not a matter of dispute.

Dr. William Draper said, in a discussion on gout occasioned by a previous paper, that the "gouty habit is a constitutional vice, a vice of nutrition." We say that a man has gout because he has too much uric acid in his blood; but the close rela-

tion between diabetes and gout suggests the idea that the former is a condition of imperfect combustion of carbohydrates, and the latter of proteids. This seems to give a good working hypothesis for the understanding of these diseases. In the same discussion Dr. F. P. Kinnicutt said: "I believe that gout exists in America to-day to a very large extent, and I should say that probably it exists more frequently in the irregular than in the typical form. We do not see so much in the hospital as in private practice. What I see in private practice perhaps more frequently than any other manifestation of it is both the typical and irregular forms in women, particularly as they approach the climacteric. I think that about the approach of this period you will find in very many women all the manifestations of gouty trouble."

The diagnosis of chronic gout following a series of acute attacks and gradually settling down to a permanent condition is easy enough, but this is not the beginning that we usually find. Like Bright's disease, a very large number of cases are gradual in onset, and it is hard to say just where they began. This is especially true of the cases in which the articular symptoms are not very marked. In articular gout the picture of a chronic case is very typical. We have the deposits of concretions about the joints with the skin over the tophi becoming stretched and often discharging so-called chalkstones. The subject of such a condition is usually anæmic, poorly nourished, and in addition has those signs which follow in endarteritis, namely, high-tension pulse, an increased quantity of urine of low gravity and containing a trace of albumin. In studying hospital reports some years ago I was struck by the extreme rarity of diagnosis of gout and the frequency of the diagnosis of chronic diffuse nephritis. It would seem that the microscope had concentrated our gaze too much upon kidney-pathology. It is a teaching of some, or at least the impression given students, that many of these cases are primarily cases of nephritis, and that scleriasis of the vessels with the accompanying condition is secondary. Certainly a good many of these cases are cases of gout, or at least of the gouty diathesis, and should be treated, especially at the beginning, as cases of lithæmia. The importance of early diagnosis is that the avoidance of sclerotic conditions depending upon gout depends upon a proper management of the underlying vice of nutrition.

The discussion of the diagnosis of gout would not be complete without a consideration of some of the more irregular manifestations. These may be nervous, gastric, cutaneous, pulmonary, or may affect the organs of special sense. Their irregular manifestations are as often due to hereditary tendencies as to acquired gout, hence we see them often in very young people. The gouty habit or lithæmic state may even appear in infants. Infantile eczema may sometimes be due to hereditary gout when it is unusually obstinate to treatment. In older people cutaneous affections are very closely allied to this constitutional vice. So firmly is this belief held in these days, that no one would think of treating chronic psoriasis without attention to diet; but skin-affections are not always gouty, and the effect of diet and the modification of other conditions of the system upon the course of the disease should be studied before arriving at the conclusions that any particular skin-disease is due to gout.

While writing this there comes through the mail a pamphlet on psoriasis, in which Dr. L. Duncan Bulkley, in speaking of the relation between gout and these very troublesome skin-affections, says:

"It is often very difficult to determine with certainty the underlying causes which operate to produce the eruption, for it is observed in those presenting widely diverse conditions of life and under the greatest variety of circumstances. It develops with about equal frequency among the poor and the rich. Not only will it appear after exhaustive diseases, after pregnancy, and in those debilitated by various excesses, but it comes also in subjects who are apparently in the best of health and enjoying the surroundings of a healthy and apparently proper life. No single cause or element, or any combination of causes or elements, can be traced in every case.

"The evidence increases, however, that it is more or less closely allied to the blood-states which are known as the gouty and rheumatic."

The gout-factor in the production of pulmonary affections and affections of the organs of circulation is also pretty clear, for gout is certainly often a factor in the production of chronic bronchitis and in the sclerosis of vessels and valves, which is so familiar as the cause of those diseases of the heart and bloodvessels which are of gradual onset. That chronic bronchitis is often due to gout might be inferred from the fact that it occurs so often in gouty people, and that it is sometimes ameliorated by a course of treatment for the underlying constitutional state when more direct methods have had but little effect. Gastro-intestinal disorders are often of a gouty origin. This is especially true of attacks of biliousness in which the tongue is dirty, the bowels constipated; headache and all the other usual symptoms are not only present, but rather persistent. When these bilious attacks occur with unwonted frequency and are not modified by ordinary treatment, it is well to investigate for other evidences as to the gouty diathesis. To some of the nervous manifestations we have already alluded in quoting some remarks of Dr. Kinnicutt.

The nervous manifestations of gout may be divided into two classes, the immediate and the remote. The immediate are such as are due to the effect of

sodium urate circulating in the blood and coming in contact with nervous elements or being deposited in them; the secondary effects are due to the gouty ravages upon tissues in the neighborhood of nerves or upon the bloodvessels by which the large nervous centres are nourished. Perhaps the commonest manifestation of gouty state in its recurrent form is a migraine. The investigations of Haig caused him to come to certain conclusions after elaborate clinical and chemical investigations. After trying a great variety of alternations of diet, he gave up all butcher's meat and replaced it by milk and fish. On this diet the headaches disappeared by the intervals becoming longer, until finally he went eighteen months without an attack of notable severity. In searching for the cause of this phenomena he discovered the relation between his headache and the excretion of uric acid, and means by which he could control the excretion of uric acid from day to day, or from hour to hour, and that in altering the uric acid he could alter the symptoms relating to it. He noticed that when he produced the headache, mental depression, etc., there was an increased excretion, and when he stopped the plus excretion with an acid he removed all these symptoms. But he noticed that in curing the headache by giving the acid he produced a certain amount of shooting-pain in the joints, the meaning of which probably was that the uric acid which failed to appear in the urine must have been held back in the joints and produced pains. The headache depended upon the absolute quantity of uric acid circulating in the blood.

Haig's interpretation of the phenomenon is as follows: He supposes that gouty symptoms are due to an accumulation in the body of uric acid depending upon a diminished excretion. He points out that if excretion falls behind secretion by a minute quantity, in the course of time there will be an accumulation. He supposes that so long as this accumulation is quietly stored up in the tissues there are no constitutional symptoms, but when for any reason this is liberated and circulates in the blood the symptoms appear, and naturally enough an excess appears in the urine. This theory certainly explains very well the increased excretion that he observed at the time when symptoms were present or imminent. This also explains the periodicity of attacks. He believes that in persons in whom the balance of secretion and excretion is but very slightly deranged there is a very gradual accumulation, and that such persons will suffer from gout in some of its more obscure forms after years have elapsed.

In practice, however, we would not wish it to be thought that gout is by any means the cause of all or even the majority of cases of migraine. This most interesting affection, in all probability, has a number of very different origins. Neuralgia affecting the sciatic nerves, the intercostal nerves, the fifth nerves, or, more rarely, other nerves, are often gouty in origin. The gouty subjects are also liable to neuralgic pains of a shooting, drawing character, lasting a moment and then disappearing in almost any part of the body. They also suffer from visceral pains of a neuralgic character. A true neuritis most commonly affecting the sciatic nerve is common in gouty subjects, especially if alcoholic. In speaking of the more or less indefinite nervous symptoms of gout, Gowers says "that cases which may be regarded as functional are those in which symptoms, commonly subjective in character, result from some morbid blood-state."

Occasionally there is definite failure of power, lasting for a few days or weeks, without objective symptoms, and passing. But the most common symptoms for this cause are sensory and subjective, feelings of tingling and formication in the legs, dull aching, and sometimes actual pain; this is usually transient, but occasionally continues for some days or weeks, varies in position, but in gouty cases often felt in the heels. Symptoms due to morbid blood-states, like other symptoms of the same class, are especially common in persons who inherit a tendency to gout, but have not suffered from attacks of definite arthritis. Indirectly due to gout are the effects of the interruptions of circulation which go with gouty endarteritis. The thickening of the cerebral arteries may give rise to attacks of dizziness, temporary loss of consciousness, and even impaired mental conditions. When a condition of endarteritis sufficient to cause these symptoms is present, there is, of course, great danger of thrombosis and an accompanying destruction of brain-matter, with symptoms corresponding to its location.

Of the effects on the special senses, due to gout, we will speak briefly. It may attack almost any of the tissues of the eye. As a cause of conjunctival irritation it seems to be quite frequent. Iritis, though perhaps more commonly rheumatic, may still be due to gout. Even glaucoma has been attributed to it, but the evidence is not very strong.

Gout as a cause of deafness is sometimes due to urates being deposited between the layers of the membrana tympani. Gouty subjects are especially liable to inflammations of the throat and larynx, and to catarrhal conditions generally, but there is no direct evidence that it is more than the increased liability which would come with the depressed vitality of a constitutional disorder.

The manifestations of gout have not by any means been covered by this enumeration, but we must pass now to a brief consideration of the man-

agement. The word management, as a name given to our efforts to bring about a cure of gout, is better than the word treatment, because treatment carries with it a trace of an idea of a specific plan of medication. It is a trite remark that the management of gout is chiefly a question of hygiene, and that though the value of drugs cannot be disputed when applied to proper cases at the proper time, still no one drug is always available. To a condition like this we are apt to apply the statement that its management is chiefly a question of hygiene. A good many persons, both laymen and physicians, fall into the error of supposing that a hygienic treatment is easy of accomplishment. This is a deep error. The cure of a disease by the modification of patient's surroundings and the habits of action of his organs may well tax the patience, knowledge, and ingenuity of his doctor. Hygienic treatment includes not only the modification of air, mode of life, food and drink, but the skilful use of drugs, which are directed to the improvement of the physical action of the organs. It does not seem quite philosophical to include tonics, blood-foods, and laxatives under the head of a drug-treatment of the disease.

The first question that arises is that of food. We must modify the popular notion in regard to different classes of food. We are not in a position to draw a line between carbohydrates and proteids. Clinical evidence is brought forward by Dr. William H. Draper and others that some gouty patients do well on animal-diet, controverting the theoretical conclusion that meat is to be avoided. The safest hypothesis upon which we can work is that in gout there is an impairment of the chemical powers of the body, which in different patients affects somewhat different processes. Some hold that it is a question of deficient oxygenation, so, of course, we think immediately of remedying the defect by supplying more oxygen. This we attempt, but we must also take pains that the amount of these foods, concerning which there is a failure of chemical action on the part of the body, shall be in as small a quantity as possible.

In discussing the previous paper already alluded to at the New York Academy of Medicine, Dr. William H. Draper said:

"Shall he confine himself to starchy foods and take as little proteid food as possible, or shall he take proteid food with the proper proportion of starchy food? My own experience leads me to think that a gouty person does best upon a diet in which there is a good proportion of proteid food, but that he should have a fair amount of starchy food as well. Gouty persons digest proteids freely, but the carbohydrates are exceedingly difficult of digestion.

"Now, in regard to sugars, sweets of all kinds, in gouty persons, what has been your experience? There is an inability in gouty persons to digest a large amount of sweets; often they have to forswear sweets. They may indulge in spirituous drinks and suffer no inconvenience, but if they take fermented wines they suffer, and how? They have eructations of wind and are made very uncomfortable by it. Or they may suffer some of the nervous symptoms of gout as a consequence of a glass of wine or beer. Many gouty persons learn to shun the fermented preparations of alcohol. The gouty person may take distilled liquor, while he cannot take it as a fermented preparation. This is, I think, a very striking fact in the history of gouty people and one that complicates very much a uric-acid theory of the disease.

"Now, in regard to starches. It is a very curious feature—but it is one which experience confirms—that there are persons who cannot take much starch, who are made uncomfortable thereby by nervous troubles as well as by the physical distresses to which they render themselves liable. This is especially true of potatoes. The simple injunction, 'Don't use potatoes,' is often of great value to the sufferer from gout. There is something in the vice of nutrition from which gouty people suffer, which is above and beyond the question of ingestion of food. What this is we do not now understand; but I believe that some day we shall understand why it is that gouty people, who ought to eat starchy food, cannot eat of it, and can eat proteid food."

After all, the diet which Dr. Draper has found by his long experience to be best can be brought within a line of theory by considering that by not overtaxing the digestion with carbohydrates its forces are more at liberty to take care of the proteids. We will not attempt at this time to give a dietary, because in truth that must to a large extent be worked out for the individual case. We must study food from the theoretic side, but in the presence of the disease each patient must be studied by himself.

The drug-treatment of gout is not a specific treatment. After we have controlled as far as possible the supply of foods to be taken care of, we attempt to modify favorably the chemistry of the body, and here the probable philosophy of mineral-waters becomes plain. Nearly all chemical operations are carried on with water as the vehicle for the chemical agents and reagents. Every chemist knows that in seeking a chemical result the reaction of the fluids—that is, its degree of acidity or alkalinity—must be right. Now by supplying to the system fluids in abundant quantities, especially if these fluids tend to modify favorably the reaction of the system, we are certainly benefiting the chemistry of the body.

Lithia seems to have vindicated its right to a place among useful drugs in gout. Its action is probably not, as was formerly supposed, principally by increasing the solubility of sodium urate, but it seems to have also a catalytic action; that is, by its presence it favors the action and reaction of the fluids of the body to a degree out of proportion to its amount. In giving lithium, and this remark may be applied also to other drugs, it should be given in definite amount. There is no magic in native mineral-waters. Artificial waters are just as good, and have the advantage of a definite formula and safety from possible infection in rural neighborhoods. We would not think it necessary to unfold this doctrine to a

patient to whom we thought the surroundings, the mode of life, and mental effect of a watering-place were necessary, but scientific truth is not modified by popular beliefs. And the verdict of the laboratory upon the absence of any magic combination in native waters is positive.

Colchicum has been shown by clinical experience to be of great value in controlling the symptoms of gout. It relieves the pain of acute attacks and modifies the course of chronic cases. It is an English tradition, still held, that the suppression of acute gout by colchicum is liable to the production of dangerous internal diseases. Between the paroxysm colchicum can be given from day to day with apparent benefit. Piperazine is a drug that is attracting so much attention that it cannot be passed without mention, but conclusions are not yet positive. Besides these drugs iodide of potassium in chronic gout is the only one well established. The drug-treatment of gout is so much a question of adapting the well-known therapeutic agents to particular conditions that details are best left to individual judgment. Thus we see that gout is a disease which may manifest itself in a great many different ways, and the recognition and management of which must always be of great interest to physicians in every department of the profession.

THE RELATIONS OF RACE AND CULTURE TO DEGENERATIONS OF THE REPRODUCTIVE ORGANS AND FUNCTIONS IN WOMAN.[1]

BY DANIEL G. BRINTON, M.D.,
OF PHILADELPHIA.

THE results of degenerations of the reproductive organs are of equal interest to the physician and sociologist. The former finds in them the fertile sources of diseases involving the whole system as well as the special portions involved, while the latter must trace to them many of the pathological phenomena which appear in the body politic.

For many years the diminished fertility and increased ill-health of American women have attracted the attention of observant medical men in the United States, notably shown in the statistics published by Dr. Nathan Allen, of Massachusetts. In France the stationary character of the population or its actual retrogression in number has excited the alarm of patriotic men, as is illustrated by the work of the Marquis de Nadaillac, entitled *The Nation's Danger* (*Le Peril National*). It is an error to suppose that the small families or total childlessness of many marriages among the wealthier classes of France and the United States is due mainly to Malthusian principles and "preventive checks." It occurs also where these are not adopted, and has a far deeper root than the love of ease and freedom from maternal care.

This has been recognized by not a few social philosophers, as, for instance, Herbert Spencer, Schaaffhausen, and others, who have set up the maxim that the increased mental and moral development of women in modern times necessarily leads to degeneration of her reproductive powers by diverting from them the chief activity of her nervous system.

A comparison of the birth-rate between the married women of higher culture in France and the United States with that prevailing in primitive conditions seems to support this view. The observation of Dr. Boas among the native Indians and the half-breeds on our reservations shows that the married women of forty years of age have had as a rule seven to eight children apiece; whereas in the class of Aryan whites referred to five accouchements at term by that age would seem to be an average. To be sure, among the whites, there is a considerable difference between the upper and the lower classes, and between those of one stock and another; but these facts do not militate against the maxim above quoted.

It does not require arguments to prove the largely increased prevalence of uterine displacements and diseases in highly cultured women, both married and unmarried; nor to emphasize the well-known and remarkable ease of parturition enjoyed by the savage woman in contrast with her civilized sister. We must look upon these as parts of the complicated processes of domestication. The same contrast is seen in the lower animals. The high-bred Silesian ewes of Saxony can scarcely drop their lambs without artificial assistance; "pedigree" cows, bitches, and mares are always greater sufferers in natural labor than the lower and wild varieties, and the mortality among them from the sequelæ is higher.

If we seek to analyze precisely what factors lead to this condition, we may classify them as follows:

The Pelvis. The shape of the pelves of the two sexes differs but slightly before puberty. At that epoch the following changes should take place:

1. The pubic arch of the female should assume a wider span, increasing from an angle of about 60°, which it retains in the male, to about 80°.

2. The coccyx should retain its mobility, which becomes lost in the adult male.

3. The horizontal diameters of the pelvic cavity should increase, giving the basin a more extended capacity.

In the perfectly developed modern white woman these changes take place; but they occur in a much

[1] Summary made by the author for THE MEDICAL NEWS of a paper read before the Anthropological Section of the Academy of Natural Sciences, Philadelphia, January 10, 1896.

less degree in the women of the lower races. Among the Australians and Indonesians it is often impossible to distinguish between the adult pelves of the two sexes. But in highly civilized conditions the development of pre-natal life is more rapid and complete, and space is demanded for its activities. Especially the head of the fœtus at term is larger, and a wider pubic arch is required if the child is to be born alive. Hence it is that the span of the pubic arch in woman becomes the criterion and the necessary condition of racial progress—of the evolution of the human species.

The Menstrual Function. It seems an accepted fact among gynecologists that a high moral and intellectual education tends to postpone the appearance of the menses. That there is also a positive increase in the number and severity of cases of dysmenorrhœa and sympathetic catamenial disturbances among the higher classes is generally acknowledged. Especially may attention be directed to the prolonged and troublesome symptoms connected with the climacteric period. There can be no doubt that these, which incapacitate so many patients for years, are almost unknown in primitive and simple conditions of life. They are the reflex of debilitated function.

The Lacteal Function. A woman under her natural relations should suckle her own children, and is the better in health for doing so. Obstetricians are, however, well aware that it is by no means selfishness or lack of maternal feeling which obliges so many mothers among us to have recourse to wet-nurses or "the bottle." It is that their milk is insufficient in quantity or deficient in quality, or the strain of lactation is too severe on their constitutions. There is, in other words, an obvious impairment in the function of lactation.

The Muscular Structure. Tedious labor and inefficient pains are frequently caused by a lack of development of the uterine muscular fibres. They are common symptoms of parturition among cultivated classes and the higher races; scarcely known among the American Indians and the African negroes. This condition is related less to the general muscular force than it is to a diminished nerve- and blood-supply to the genito-urinary system.

Undeveloped and Adherent Clitoris. The clitoris is well developed in most anthropoid apes and also in the negro race. Among the Hottentots the labia minora and præputium clitoridis are sometimes eight to ten inches long, forming what is called the "Hottentot apron." On the other hand, in Aryan American women the clitoris is very small, as a rule, and the prepuce often adherent. This fact has been recently pointed out by Dr. Robert T. Morris, of New York City, in a note to his "Lectures on Appendicitis." His investigations prove that almost 80 per cent. of Aryan American women have preputial adhesions, and that this condition, through reflex action, tends to produce such an impression upon the nerve-centres that the whole sexual ap paratus is influenced toward degeneration. The Semitic women in this country, on the other hand, show very little tendency to this condition, and Dr. Morris raises the inquiry whether this does not indicate that, as a rule, they are destined to outlast the Aryans?

Sexual Feeling. Deficient or absent sexual feeling predisposes to infertility, and must be regarded as a degenerative symptom. Whether or not the cultured women of the present day have materially lost this feeling, or only keep it more under subjection, it is not easy to decide. Special students of women, such as Ploss, Bartels, and Ellis, speak in favor of the latter view; while Spencer and many others assert that sexual passion in woman has decidedly diminished under civilization. The novelist, Henry James, an acute observer, calls the average New England girl "passionless." Certainly, compared with primitive life, the woman of to-day reveals few signs of sex-feeling. The American Indian women were often subject to epidemics of desire, and the Bacchantes of ancient Greece gave unrestrained liberty to their erotic longings. Only in sexual perverts and distinctly pathological instances do we see anything of the kind to-day. The inference is reasonable that not only has the sexual passion decreased in women, but often to such an extent as to render them indifferent or averse to marriage, and thus to reproduction.

The conclusion from such facts forced upon us is that a series of changes has been gradually taking place in the reproductive organs and functions of woman, the general tendency of which is to reduce her procreative capacity, and that these are more permanent and extended in the Aryan stock than elsewhere.

CLINICAL LECTURE.

CLINICAL LECTURE ON INSANITY.[1]

BY RALPH A. GOODNER, M.D.,
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GENTLEMEN: The first two cases I will present to you I consider interesting, because in many respects they present similar symptoms, yet belong to entirely different forms of insanity. This is L. C., this J. O., both about thirty-two years of age, farmers, education limited, fair physical condition. L. C. has been insane about two years, and his mother was insane. J. O. has been here since last April, and has one imbecile sister. I

[1] Delivered before the Southern Illinois Medical Association at its Twenty-first Semi-annual Session, held at Anna, Ill., November 22, 1895.

know nothing of his history except what I have stated. We have probably heredity in both cases.

Now for the similarity of symptoms; both have delusions of persecution of a religious nature. L. C. says that he has committed the "unpardonable sin," that there is not any hope whatever for his salvation, and that his soul is hopelessly lost. J. O. says that he has been a very wicked man, that he is the chief sinner, and that his sins have been great and many. Each feels that he is imprisoned in this hospital because of his sinfulness; that this is the Lord's punishment. Both are emotionally depressed; their faces express that fact. There is in neither case any excitation of ideas or emotions. There is no impairment of memory or will-power. On any subject but religion they speak sanely. Now, gentlemen, so far our pictures are quite similar, and I choose these cases because the same diagnosis has been made in both—erroneously, however.

FIG. 1.

J. O. L. C.

Now for the dissimilarity: L. C. does not admit any possibility of his soul being saved. J. O. is in doubt, and is constantly debating the question as to his eternal welfare; sometimes feeling hopeless, again hopeful.

There is more depression in L. C.'s case. He prefers to be alone. J. O. is more companionable. L. C. does not think that his punishment will atone in any way for his sins. J. O. thinks the punishment will in some way redound to his credit or advantage. This is characteristic of this form of insanity; no matter what they consider the persecution or whom the persecutor, they usually think it will bring them some credit or advantage in the end. L. C. believes himself worthy of his sorrow, while J. O. thinks that his punishment is too severe and is more rebellious.

L. C. thinks that anyone who has sinned as he has would be lost. J. O. thinks he is the chief sinner; is the persecuted of mankind. Do you not see how his egotism crops out, even in his persecutive delusions? L. C.'s conversation on any other than religious subjects is more or less colored by his delusions, but J. O.'s is not.

Now, gentlemen, we come to the physical signs: L. C. has a well-shaped head, measuring twenty-two and one-half inches in circumference, well-developed frontal region, and symmetry of head and face. J. O. has a head-circumference of only twenty-one inches, rather low and narrow forehead, prominent cheek-bones, small ears, protruding lower jaw, and on opening his mouth I find a saddle-shaped palatal arch. In fact, the physical marks of defective development.

L. C. is a case of melancholia religiosa. J. O. is a case of paranoia religiosa, in the persecutive stage.

This case of J. O. is in a transitional stage. Were it fully developed the differential diagnosis would be a very simple matter, because then they would be exactly opposite types of insanity.

One of these days J. O., because of a visual hallucination, a dream, vivid emotional experience, reading of some passage in the Bible, or some fortuitous circumstance, will believe himself to be a prophet, the blessed of Heaven, or a Christ. His emotions will become pleasurable, ecstatic.

Gentlemen, before introducing some cases of paranoia, just a few words. Paranoia is a form of disease occurring in one of a congenitally defective nervous organization, which manifests itself by logical or systematic delusions of persecutions and self-exaltation without excitation of ideas or emotions, impairment of memory or volition.

There are infinite types of paranoia. The one I now introduce to you has delusions of both persecution and grandeur. This case is fully developed.

This is H. K., a young man with a bright, receptive mind, aged twenty-four years, admitted only a few days ago, duration of disease four years, always been eccentric. I have no history as to heredity. You will notice he has a poorly developed head, the circumference of which is large enough, being twenty-two and one-half inches, but the antero-posterior diameter is out of proportion to the lateral. His frontal development is deficient, and out of proportion to the occipital.

This patient has the delusion that he is a second Christ, that he has a mission to perform as yet not known, that will be revealed later. He is egotistical and thinks he is persecuted by his mother and brother, who are jealous of his superior talent and genius, and would much prefer these blessings had been bestowed upon a brother who is now attending the University of Michigan. His delusions are systematized and limited, which should be the case in paranoia. On all other subjects he speaks intelligently. This young man otherwise is really bright. He completed his education at one of our State normals.

The next case of paranoia is H. F., whom we call "Professor," an appellation of which he is very proud. He is forty-seven years of age and has been here twenty-five years. He was a school-teacher. His father was neurotic.

"Professor" has fixed, egotistical, and persecutive delusions. I will ask him to tell you what he thinks of himself.

Professor: "I am the smartest man in the world and as superior to the ordinary man as man is to the lower animals. I am destined to be the progenitor of a new race, just as Adam was of the people who now inhabit this world, but I have always been persecuted by the witches."

I will now ask the "Professor" why he thinks he is persecuted by the witches. I do this to illustrate a systematized delusion, one that is explained and defended. In acute mania or paresis the delusions are unsystematized, and if I ask such a patient the question, "Why do

you think you own the world?" etc., he cannot give me any plausible reason.

Now, Professor, tell the gentlemen why you think you are persecuted by the witches. Professor: "Well, you see it is like this: The witches have a power over me and will not give me a chance to marry because they fear I will start a new, superior race of people who will be able to cope with and overpower them."

"The Professor."

This case well illustrates one thing Dr. Runge, of St. Louis, told you this morning, namely, one suffering from paranoia does not usually drift into dementia as do the other forms of insanity, at least if he does the progress is slow. This man has been insane twenty-five years, and is just the same now as when admitted so far as mental ability is concerned.

This is H. T., a different type from the preceding ones. This is erotomania, so called, but it is only a form of paranoia. His age is thirty-one years, occupation teacher, paternal aunt insane, and father intemperate. He has been here and at Jacksonville a number of years. He is one of those fellows you often see whose egotism finds vent in aspiring to the hand and love of a lady far above him socially and financially. They never become discouraged, but think and dream of their loved ones constantly. They are often given to poetry. This man writes letters and poetry to a lady of social prominence, which, of course, we never send.

If he has any delusions of persecution, I have never been able to detect them. Perhaps earlier he did, and has lost them, for it is sometimes the case that the delusions of persecution become effaced. It was not so in "Professor's" case, however, he having retained his twenty-five years.

This is W. R., aged twenty-nine years, admitted eighteen months ago, always considered peculiar. His mother was insane. He has delusions of persecution, differing only from J. O. in that his are not religious in character. He imagines every now and then that some other patient, usually a quiet, inoffensive one, "has it in for him," as he expresses it. He will interpret a whisper or gesture that has no relation to him as inimical, and plead to be removed to another hall. Otherwise he is bright, active, and seemingly sane.

He, as well as J. O., is probably in a transitional stage, and later will develop egotistical delusions. Even now, the attendants tell me, he is inclined to be conceited and feels that he is superior to other patients.

The next case is C. F. Nothing is known of his history; was a tramp picked up in Fayette County and brought here. He says General Grant appointed him Commander-in-Chief of the United States Army and Navy. I show this case because his delusions of persecution depend upon an hallucination; *i. e.*, he says his enemies are trying to keep him out of this office, and have been trying to poison him; and he thinks this because he imagines that he tastes the poison in his food, an hallucination of the sense of taste. So much for paranoia.

Now a few words about paresis before I show you some interesting cases. The word paresis has several synonyms, namely, general paralysis of the insane, paretic dementia, dementia paralytica, and in popular language "softening of the brain," although this is a misnomer, because while it is true the consistency of the brain is less firm, there is never a true necrotic softening. Paresis is a structural disease of the brain; briefly, it is a degeneration of the cortex and a low-grade inflammation of cortex and membranes.

It is a disease displaying slowly increasing mental impairment, disorders of muscular movement, disturbances of higher reflex action, physical and mental decay.

The principal causes are syphilis (three out of every four cases we receive having syphilitic histories), intemperance, excessive venery, indirect physical and emotional causes, and trauma. In other forms of insanity we find ordinarily mental symptoms only, but in paresis we have both physical and mental well marked.

The principal mental symptoms are delusions of grandeur (although they are sometimes depressive, or the two may alternate), change of character, loss of memory, and impairment of volition. The emotions are usually exalted, but they too may be depressed.

The most prominent physical symptoms are inequality of pupils, difficulties in articulation, inco-ordination, muscular tremors, epileptiform and apoplectiform convulsions, and finally paresis.

The first case I show you is R. R., aged thirty-three years, occupation brakeman, duration eighteen months, syphilitic, intemperate, Keely graduate, no heredity. These cases usually do not show hereditary histories. They have in most cases well-developed heads and brains. There are three stages of paresis: First or prodromic; second or stage of expansive or depressive delusions, accompanied by well-marked physical symptoms; third or stage of dementia.

This man is in the second stage. I will ask him to tell you what he owns. He says "The world, etc." You will notice how he drawls his words, hesitates in speech, the excessive motility of facial muscles, the tremors. Now while he walks please observe the ataxic gait—how his feet are kept apart to widen the base of his support. I test his eyes and they do not respond to light or accommodation; his patellar reflex, you see, is abolished.

The next case is A. A., aged thirty-four years, occupation merchant, no heredity, duration eighteen months, syphilitic and intemperate. He is also in the second stage. His delusions are not quite so extravagant and

his memory much better than the preceding case, but on asking him to talk he tells you what a scholar he is—reads, speaks, and writes all languages.

You notice, as in our preceding case, the well-marked physical symptoms, namely, difficulty of articulation, prolonging his words, tremors, ataxia, and loss of patellar reflex. His face presents a soggy appearance, and this is often present in these cases. When he came here he said he would pave the streets with gold, etc.; but after being here several months he had a remission, and all mental symptoms disappeared. And here let me say, in these cases remissions are often seen for a few months or even years. Their friends often begin to think they have recovered, but it is a false hope.

The physical symptoms, though not so pronounced through the remissions, usually linger to some extent, as is shown by the tremors, gait, and speech.

The next case is C. W., ex-member of the Legislature, abstracter, a wealthy and prominent man, who has been very intelligent and highly educated, aged forty years, duration three years, no heredity, syphilitic, intemperate, and in the second stage. He shows a general mental weakening, and is more emotional than the preceding cases. He has had delusions of grandeur, but has not now. You notice the physical symptoms are not marked. When he speaks, however, you see excessive movement of the lips. This case is slower in progress than the others, and he is much more destructive. You know the average duration of life—for this is a fatal disease—is only three years. They are usually not committed to us until they have been paretics for some time. The average duration of hospital-life is only twelve or eighteen months.

The next case is L. C., merchant, aged forty-three years, no heredity, duration two years. He is not syphilitic or intemperate, a man of good morals; so we must look elsewhere for a cause, and here we have it. You remember I mentioned trauma as one cause. Well, here is a linear depression on this man's forehead, caused by a blow which preceded this attack. When I came here, less than three years ago, they had but one case of paresis, and it also developed from a traumatic cause. Since then we have admitted twenty-two cases, so it seems to be decidedly on the increase in our territory.

This case of L. C. I show you to illustrate a case passing from the second into the third stage. This man thought he had millions only a few weeks ago. His talk now is incoherent, and he is rapidly passing into dementia.

This case well illustrates the necessity of an early diagnosis, not only because remedial or surgical measures might be more successful, but so you can warn their friends of the possible line of conduct such cases may pursue. This man, before his condition was known to the public, feeling so wealthy, burned notes and money, gave too much change in return, and other unbusiness-like methods, until he became bankrupt.

The next case is L. K., aged thirty-two years, butcher, duration two years, syphilitic, intemperate, no heredity, and a Keely graduate. We have about five cases of paresis who have taken some one of these "whiskey-cures," and the "cure" is often blamed by their relatives for causing the insanity; but I believe the soil has already been prepared by the syphilis, by the years of intemperance and excessive venery, and that they would have developed paresis anyway. Again, if it is due to the "cure," why is it the other forms of insanity do not develop? Why should my cases who have taken the "whiskey-cure" each give a history of syphilis and intemperance?—the very causes of most cases of paresis, if the "cure" is the causative factor. I give this only as my own limited experience; other observers may have had a different one.

This patient has an exaggerated patellar reflex, quite opposite to the others, this being due to the involvement of the inhibitory fibres which pass from the cortex to the anterior columns of the cord. He also has contractures and ankle-clonus, so that the lateral columns are also involved; and that reminds me I had a very interesting case of ascending or spinal paresis to show you, also a case in the prodromic stage, but both were removed on furlough a few days ago.

I thank you, gentlemen, for your attention.

CLINICAL MEMORANDA.

A CASE OF BRONCHO-PNEUMONIA IN THE NEWBORN.

BY HENRY BIXBY HEMENWAY, A.M., M.D.,
OF EVANSTON, ILL.

A FEW weeks ago I was engaged by a healthy young couple to attend the wife in her second confinement. Notice that my services were required was served upon me on the afternoon of November 3, 1895. I called about 5 P.M. and found Mrs. A. in the parlor talking with the nurse, who had just arrived. While I was there she had a couple of pains, but I made no examination at the time for the reason that I believe a vaginal examination often hastens a labor, and I preferred to have a little delay for reasons of my own. On the other hand, I was satisfied from the history given and from watching the patient during pain that I could safely leave her for a time, especially since I could be easily summoned by telephone if needed.

I returned and made an examination at 7.15. I found the os uteri slightly dilated. There was no "bag of waters." To the best of my judgment I had to deal with a breech presentation in the S. L. P. position. For this diagnosis I was almost as much dependent upon external palpation as upon vaginal examination. After giving some further directions I left, promising to return shortly after 9.

When I again reached the house, at 9.15, I was informed that they had telephoned for me within five minutes, about which time the body was born, but they had been unable to extricate the head.

Mrs. A. was lying upon her back and the child prone between her limbs. I had no difficulty in extracting the head by means of my index hooked over the lower jaw and with the body elevated.

I found the child in a condition of asphyxia pallida. Every muscle was relaxed. There was practically no pulsation in the cord and the heart of the child was only beating about forty times a minute and very feebly.

I immediately wiped out the pharynx of the child,

but was surprised to find it relatively dry. I immediately cut the cord and began artificial respiration by the methods of Schultze and Sylvester, and also by a method which I have long used with good results, but which I have never seen described until recently. It is performed as follows: The child lies supine upon the operator's palms, its head being supported by his right thumb and index. The operator rotates his hands, first elevating the ulnar side, thus permitting the chest to expand and the lungs to fill. Then flexing the child upon itself the air is expelled.

I also tried traction upon the tongue, and several times I passed my finger covered with a handkerchief into the pharynx. I slapped the body, especially over the heart. I used alternately hot and cold water, both in dash and plunge. In spite of all this every muscle remained flaccid. There was not the slightest reflex apparent nor evidence of revival. Not only so, but I could get no evidence that by any of the methods tried any air had entered the lungs. Apparently I had to do with a genuine atelectasis. The lung-cells had perhaps become agglutinated, needing something more than ordinary atmospheric pressure to open them.

I put the child upon a table, holding its head upon my right hand slightly lower than the body. My left hand I laid upon the abdomen, with my fingers on one side and my thumb on the other side of the thorax. I then carefully filled the lungs by air from my own mouth. As soon as the chest was full I compressed it with my left hand. After about half an hour's work the child gasped, and the gasps became more frequent until about 10 o'clock she was breathing. I alternated this method of artificial respiration with the others, and after I had once inflated the lungs I forced a little bloody mucus from the nose by the Schultze method.

I had the child oiled all over with warm lard and then I rubbed her with warm flannels. She frequently stopped breathing, and even with the care taken she was getting cold. At last, however, she was breathing regularly, though rapidly, and the body was warm. There were some coarse mucous râles in the bronchi.

After 1 o'clock the household quieted down for the night. The next morning I was informed that the child had rested well and nursed strongly. At 5 P.M. the baby still seemed to be doing well. She had urinated and defecated. She had nursed several times. There were still the mucous râles. I had the nurse put the baby over her shoulder so that I might more easily listen at the back of the chest. While I was doing so the baby put her fist in her mouth and sucked it strongly.

About 10.30 P.M. the child was lying in her mother's arms for sleep. The mother thought she did not seem natural and aroused the household. When I reached the place half an hour later I found the baby's face very dusky. Pulse and respiration 70, the alæ nasi distending strongly with each inspiration. Temperature taken in the axilla 106.1° F. I made, of course, an unfavorable prognosis, considering the case one of broncho-pneumonia, apparently most severe on the right side. Diagnosis was based upon generally diffused percussion-dulness, with spots of increased resonance and mixed mucous râles. Life lasted until 5 o'clock the next morning. The pulse remained strong until long after the respiration had become feeble and infrequent. From the time I was called the little patient was unable to swallow. She never cried from the time she was born. After death I noticed protruding from the nostrils something similar to cotton in appearance. The nurse informed me that this first became visible about two hours before death. I have never seen a like substance except in cases of diphtheria.

The mother made an uneventful recovery in spite of the severe shock caused by the sudden death of the baby. Thirteen days after the birth of the baby the other child had a sudden and severe attack of laryngitis, which lasted about five days, though it had been preceded by a slight cough which was at first supposed to be pertussis, caught from cousins. I could detect no false membrane in this case, though there were some indications in sound and temperature that it might be membranous. There were cases of diphtheria and scarlatina in that portion of the city, though I knew of no communication with such cases.

In the case of the baby I noticed a peculiar odor to the breath, and at the same time considered the possibility of infection through my breath at the time of resuscitation, though I was in good health.

The case illustrates to me:

1. That inflation by expired air may succeed when other methods fail.

2. That the method is dangerous because of the ease with which mechanical injury may be done in spite of care.

3. That the method may be dangerous because of the possibility of infection.

I do not think that delay in extricating the head from the vaginal canal was the only cause of atelectasis, because:

1. The child's pharynx was clear from mucus. Of course, if the child's face were covered by the posterior wall of the vagina asphyxia might be produced without the inhalation of mucus. In that case, however, as soon as the face was extricated there would be no further obstruction to respiration.

2. Atmospheric pressure alone was not able to open the air-cells of the lungs.

CONJUGAL DIABETES.

BY HORACE Y. EVANS, M.D.,
OF PHILADELPHIA.

THE literature of conjugal glycosuria is deemed sufficiently extensive and reliable to banish the instances of its occurrence from the category of coincidences.

As long as we are without positive knowledge of the pathology of diabetes mellitus we are encouraged in presenting any peculiarity or anomaly that may tend to confirm or disprove some of the many theories suggested as to its cause.

The data of the following cases are given for the same reason that cases of suspected communication of phthisis pulmonalis from husband to wife were reported twenty-five years ago.

The experience of many of us will no doubt agree with the statement of Debove: "Il est probable que la proportion aurait été plus grande si j'avais toujours en soin d'examiner l'urine des deux conjoints."

The apprehension at the present time seems to be that, under some, as yet, unrecognizable circumstances, diabetes mellitus does become contagious.

Especially does the slowly accumulating testimony go to show the possibility of the husband communicating the disease to his wife.

Mr. C., married at forty-six years, glycosuria developed at fifty years, died of broncho-pneumonia at sixty years.

Mrs. C., married at forty years, glycosuria developed at forty-eight years, died of œdema of the lungs at sixty-two years.

Mr. W., married at thirty years, glycosuria developed at sixty years, died of diabetic coma at sixty-eight years.

Mrs. W., married at twenty-eight years, glycosuria developed at sixty-five years, died of diabetic coma at seventy-five years.

These cases presented no symptoms but such as are usual in chronic diabetes.

They were all corpulent people, weighing from 180 to 250 pounds.

None of them were blood-relations.

Heredity was not a factor in any of them.

None were of the Semitic race.

Three of the four were natives of Philadelphia.

One of the four also was a neurotic.

One only was a sumptuous liver, occasionally using alcohol and tobacco.

LARYNGEAL SYPHILIS, WITH REPORT OF A FATAL CASE; AUTOPSY-NOTES.

By A. M. DAVIS, Ph G., M.D.,
PATHOLOGIST TO GERMANTOWN HOSPITAL.

This affection, which is one of the most obscure and most interesting manifestations of general syphilis, affording as it does varied clinical and pathological features, has been claimed by many authorities to be of more common occurrence than is generally supposed. Engelsed[1] saw involvement of the larynx 25 times, among 521 cases, or 4.8 per cent. In 218 cases examined by Willigk, 15.1 per cent. showed laryngeal disease, while in Sir Morrell McKenzie's statistics, taken from 10,000 cases, 308 gave evidence of involvement of this organ, furnishing an average of nearly 32.5 per cent.

The lesions appear wide and varied, consisting at the onset of a simple catarrh or follicular hyperplasia, terminating in either condylomata, gumma, or extensive ulceration, with necrosis and cicatricial formation, either singly or combined, as the case may be.

Virchow thus describes gummy tumors:

"Their beginning consists of little, roundish elevations (on the epiglottis and within the interior of the larynx, either singly or as a conglomerate mass) similar to the follicles of the root of the tongue, but of a softer, more marrow-like consistency, often richly supplied by bloodvessels, and especially surrounded with varicose veins. These nodules ulcerate on their surface, at first forming shallow ulcers (the surface breaking down and being cast off), and gradually penetrate in depth as new portions of tissue are involved in the change. . . . If the ulceration reaches a certain depth, a purulent perichondritis usually becomes associated with it, which is combined with partial necrosis of cartilage, and finally effects the expulsion of the necrotic pieces, with the formation of deep sinuous cavities. It is these deep laryngeal ulcers that bring about the much-dreaded stenoses when they undergo partial or complete cicatrization. The margin of the epiglottis becomes at first infiltrated, then the ary-epiglottidean ligament, followed by the true and false cords."

Norton describes a fatal case from a gumma the size of a pigeon-egg, which was situated in the right epiglottic fold.

The most common period of life at which laryngeal syphilis exists is quoted between the ages of twenty and forty years, but cases have been known of hereditary origin; thus, Isidor Frenkl records the case of an infant, apparently healthy at birth, which developed two months later an acute coryza, with progressive laryngeal dyspnœa. Three weeks after the development of the first symptoms death followed, due to stenosis. The autopsy revealed necrosis of the cricoid and left arytenoid cartilages and syphilis of the liver, all of the other viscera being in an apparently normal condition. Following is the report of a case which occurred during the writer's term as resident physician in the Philadelphia Hospital:

J. T., aged forty-six years. Nativity, Philadelphia. Cause of parents' death unknown. No hereditary disease peculiar to the family. She was always healthy when a child; other than this statement the patient absolutely refused to give her history. Physical examination revealed the following: Well-nourished and corpulent individual, weighing about 200 pounds. The breath-sounds during ordinary respiration were quite audible, inspiration being louder and higher pitched than expiration. While the patient remained quiet dyspnœa was scarcely noticeable, but developed on making any unusual exertion, becoming at that time severe and distressing. Several small, irregular ulcers were noticed on the skin of the abdomen and back, and a rupial sore about three inches in diameter, containing a grayish slough, covered the left frontal prominence, the ulceration extending down to the frontal bone.

The tongue and mucous membranes of the cheeks were covered with mucous patches. Examination of the thoracic and abdominal viscera gave negative results.

The patient was placed on the "mixed treatment," consisting of the bichloride of mercury, gr. $\frac{1}{24}$, with iodide of potassium, grs. 10, three times daily, the patches on the tongue and cheeks having been cauterized with the solid stick of silver nitrate. Ten days later symptoms of ptyalism began to develop, and about the same time the laryngeal dyspnœa increased markedly. Pain was absent, and the temperature remained normal. One month after admission the patient was found cyanosed and unconscious, gasping for breath, death resulting in a few minutes, before tracheotomy could be performed.

The autopsy notes were as follows:

An immense amount of adipose tissue surrounded the abdominal viscera and was contained in the abdominal wall, measuring at a point above the crest of the pubis 7 cm. in thickness.

Larynx: The tongue, which was removed with the larynx, showed the circumvallate papillæ to be enormously distended. Epiglottis and vault of the pharynx apparently normal. The thyroid cartilage on the left

[1] Cited in Virchow and Hirsch's Jahresbericht, 1868, ii. b. d., p. 585.

side was necrosed, the necrotic area extending across the median line to the right and being surrounded by a sloughing ulcer which filled up the entire space below the left cord. The tissues underlying the right and left cords were sensibly swollen, the mucous membrane of both cords being inflamed and infiltrated.

Heart: The muscle was thin and everywhere infiltrated with fat, bands of which could be seen running between the fasciculi, giving the peculiar, striped yellow-red appearance. The mitral valve contained a spicule of calcareous infiltration on the free margin of one of the cusps and another nodule near its base; other valves normal.

Kidneys: Cortex showed two or three depressions, the result of hemorrhagic infarcts which had been partially absorbed; otherwise normal.

Liver: Normal in size and weight. Section revealed evidences of fatty infiltration.

Voluntary muscles: Were soft in consistency and infiltrated with fat.

An examination of the lungs, spleen, stomach, bladder, uterus and appendages, and intestines failed to reveal anything pathological.

The pathological diagnosis was: Syphilitic laryngitis, with fatty infiltration of the voluntary muscles, heart, and liver.

Another case of asphyxia from stenosis due to syphilitic laryngitis occurred during the writer's term of service, in which tracheotomy was successfully performed, the patient dying, however, ten days later from aspiration-pneumonia.

MEDICAL PROGRESS.

Iron not Necessarily a Large Ingredient in Our Food.—Those of the profession who are in the habit of largely prescribing ferruginous tonics will do well to remember that the amount of iron contained in the average daily diet of a man seldom exceeds 10 mgms., and a like amount is represented in the excreta.—DR. STOCKMAN, *Journ. Physiology*, vol. xviii. p. 488.

Bilateral Variation of Temperature.—PULLIN (*Lancet*, No. 3771) reports a fatal case of typhoid fever showing a variation of temperature between the two sides of the mouth throughout the attack, amounting at times to several degrees—the greatest disparity recorded was 3.2°. It was noted that the left side furnished the higher temperature, except on one or two occasions. The thermometer was applied between the teeth and cheek on either side. Due care seems to have been taken in these observations.

Post-mortem Cæsarean Section.—HOFFMANN (*Centralbl. für Gynäkologie*, 1895, No. 50, p. 1319) has reported the case of a woman, aged thirty-six years, who in the eighth month of her fourth pregnancy was suddenly seized with eclampsia, terminating fatally in the course of 2½ hours. Ten minutes after the last inspiration Cæsarean section was undertaken, and a living male child, 15 inches long, delivered. The infant was nourished with the aid of a spoon, but it died at the end of 25 hours in consequence of enfeebled vitality.

Cerebral Surgery.—At the last meeting of the International Congress of Otologists, DR. THOMAS BARR stated (*Journal of Laryngology*, etc., vol. ix. p. 817) that we are now able to reach and deal successfully with the following conditions: 1. Abscess in the cerebrum, especially in the temporo-sphenoidal lobe. 2. Abscess in the cerebellum. 3. Purulent formations at the base of the skull. 4. Infection-thrombosis of the sigmoid sinus.

Who should operate? The question as to who should operate upon these intracranial conditions was presented to the same body, and it was conceded by all that operation belonged appropriately to the province of the pure otologist.

Restoration of Cutaneous Continuity by Epithelial Grafting.—To overcome the disadvantages occasionally experienced in practising the usual methods of skin-grafting, MANGOLDT (*Deutsche medicin. Wochenschrift*, 1895, No. 48, p. 798) proposes a new mode of transplantation. After shaving and disinfecting a suitable portion of the body, preferably the inner or outer surface of the forearm, the skin is made tense and gently scraped down to the papillary layer by means of a sharp razor held at right-angles to the surface. The mixture of blood and epithelium removed is transferred to the previously prepared wound that is to be covered, and there firmly applied with the aid of pressure and a protective dressing. The graft adheres readily, and in the course of a week gives signs of its presence and growth; a new layer of epithelium will usually have formed after the lapse of three or four weeks.

A Contribution to the Statistics of Adenoid Vegetations of the Naso-pharynx.—As the result of an extended clinical study, ARSLAN, of Padua (*Ann. d. Malad. de l'Oreille, du Larynx, etc.*, 1895, No. 12, p. 509), has arrived at the conclusion that adenoid vegetations of the naso-pharynx are of frequent occurrence in Italy. He maintains that heredity and dyscrasic diseases play the principal *rôle* in the etiology; next in importance follow humidity and infectious processes. Operative treatment should, if possible, be concluded at a single sitting. The Moritz Schmidt incision, followed by scraping with the finger, should constitute the procedure of choice. Ethyl bromide is the best anæsthetic for the purpose, and is far superior to chloroform, to ether, and perhaps also to nitrous oxide. In all cases in which the presence of adenoid vegetations in the naso-pharynx is detected the growths should be removed, even if not voluminous. All children should be subjected to a naso-pharyngeal examination before being admitted to public or private schools, to institutions for deaf-mutes, or to other educational institutions.

The Etiology of Multiple Sclerosis.—With the view of clearing up some of the doubt involving the question of the etiology of multiple sclerosis, KRAFFT-EBING (*Wiener klinische Wochenschrift*, 1895, No. 51, p. 895) made a study of 138 cases seen in private and hospital practice. To this end he included in his investigation only cases in which the diagnosis was indisputable; 38 cases were thus excluded. Fifty-eight of the cases were in males, 42 in females. The largest number (44—28 males=16 females) occurred between the ages of twenty-one and thirty years. Among 53 cases (35 males, 18 females), in which an etiologic factor could be

elicited, cold and wet could be considered of causative significance in 40 (30 males, 10 females). These cases fall naturally into two groups: (*a*) Those in which exposure occurred but once, though in intense degree; and (*b*) those in which the exposure was slight but long continued. In the former the symptoms of sclerosis appeared at once, while in the latter they developed insidiously. How cold and wet bring about multiple sclerosis is yet a matter for discussion—whether by lowering the bodily resistance to infection, or by the generation of noxious miasms outside the body, or by inducing metabolic changes leading to autointoxication, or by disturbance of the circulation and the nutrition of the nervous system through an influence upon the vasomotor apparatus.

Familial Myoclonus.—UNVERRICHT (*Dtsch. Zeitschr. f. Nervenheilk.*, 1895, vii, H. 1, 2) reports three cases of the disorder known as myoclonus, which correspond to the cases previously described and justify the recognition of a typical clinical entity. The disorder is manifested by lightning-like contractions, affecting individual muscles of the trunk, face, and extremities. In no case was the face free from movement, but in none also was any movement of the eyeballs observed. The œsophagus, the tongue, the thorax, and the diaphragm were all involved. Although the muscles were symmetrically affected, there was an absence of synchronism in the movements. Muscles acting synergistically were never jerked in common or simultaneously; on the contrary, single muscles or even muscle-bundles were affected. Nor were the movements co-ordinated, as from cortical irritation. The characteristic feature was the absolute arrhythmia. The movements were increased by psychic influences, and seemed to be restrained by the will. They were lessened, but not entirely subdued, by sleep. The affection has been observed in several members of a single family, and complicated by epilepsy. The disorder is to be differentiated from hysteria, chronic progressive chorea, and epilepsy. The movements differ from those of chorea in not involving muscles acting synergistically and influenced individually by the will. This peculiarity suggests the spinal cord as the seat of the pathologic process that acts as a cause. Therapeutically, hyoscine failed, while chloral proved successful —*Centralbl. f. d. medicin. Wissenschaften*, 1895, No. 50, p. 891.

Extensive Suicidal Injury of the Vessels of the Neck, with Recovery.—THOMAS (*British Medical Journal*, No. 1823, p. 1420) has reported the case of a man, sixty-five years old, who, in an attempt at suicide with a penknife, had made a deep wound in the left side of the neck. The sternohyoid and omohyoid muscles were divided; the internal jugular vein was cut through, and its cut ends were collapsed and three-quarters of an inch apart; the common carotid artery was cut into, but not divided; the thryoid cartilage was notched, and the external and anterior jugular veins were severed. Clamp-forceps were immediately applied to the cut vessels and one on each side of the aperture in the common carotid, from which a small spurt of blood, certainly not half a teaspoonful, was jerked out. The left median basilic vein was exposed by an incision and twenty ounces of warm saline solution were slowly perfused, an ordinary glass syringe with a capacity of five ounces, with an india-rubber tubing attached to a canula in the vein, being employed. After seven ounces of fluid had been injected, the man made a short, distinct inspiration; at ten ounces a deeper one (the radial pulse could now be felt beating feebly); at fifteen ounces the breathing became regular and deep; at eighteen ounces the man opened his eyes, but did not appear to be conscious. The clamped vessels were now tied with catgut and the wound cleansed with carbolic-acid lotion and dressed with cyanide-gauze. The man was surrounded by hot-water bottles and the foot of the bed elevated eighteen inches. In the course of an hour the patient had recovered sufficiently to answer in a squeaky voice to his name when called loudly. Improvement proceeded rapidly until the twenty-second day, when violent hemorrhage occurred, preceded a few hours previously by a small trickle, easily controlled by pressure. The wound was at once opened and blood found oozing from the distal extremities of the carotid artery and jugular vein, which were promptly clamped. The common carotid artery was not sound, so that ligatures were applied to the internal and external carotids and to the internal jugular with a small branch entering into it. The patient was greatly collapsed, but quickly rallied, only to suffer renewed hemorrhage from the internal carotid nine days later. This was controlled by pressure with sponges, and a quart of hot water was injected into the rectum. From this time on the patient made a slow recovery, a small sinus in the lower part of the neck disappearing on the removal of a catgut ligature.

THERAPEUTIC NOTES.

Mentholated Oil for Purulent Rhinitis.—FOUGERAY (*Ann. d. Malad. de l'Or., du Lar., du Nez et du Pharynx*, 1895, No. 12, p. 497) has reported a case of acute primary purulent rhinitis in an infant, thirteen months old, due to the staphylococcus albus and staphylococcus aureus, and in which a cure was effected by the use of a 10 per cent. mentholated oil sprayed into the nares and the pharynx five or six times daily.

For the Abdominal Pains of Muco-membranous Enteritis.—

Take of

Menthol	3 grains.
Alcohol, sufficient to dissolve.	
Simple sirup . . .	6 fluidrachms.
Water	3 fluidounces.—Mix.

Dose: Take three or four times in twenty-four hours.
—MATHIEU, *Rev. de Thérap.*

The Treatment of Malarial Cachexia with Splenic Tissue and Bone-marrow.—CRITZMANN (*Presse Médicale*, 1895, No. 68, p. 507) has reported four cases of chronic malarial cachexia presenting enlargement of the spleen, anæmia, and emaciation, successfully treated with splenic tissue and bone-marrow after the usual remedies, quinine, arsenic, hydrotherapy, etc., had failed. He administered daily rather more than an ounce and a half of finely chopped spleen from a young beef, admixed with the yolk of an egg and two drachms and a half of bone-marrow. Improvement soon set in, and in the course of two or three weeks became quite pronounced.

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THE LUNG AS A POINT OF LEAST RESISTANCE.

IN our last issue we discussed the principle which determines the localization of disease and, from the standpoint of the evolutionary pathologist, advanced the theory that morbid action in many instances means simply a reversion to processes which were normal in an early ancestral or embryonic stage of development. In the case of the uterus and mammæ we saw the application of the law that late appearance means early decay.

In the case of the lungs, however, its application will be promptly challenged, first by the bacteriologist, on the ground that tubercle is an "exposure" disease due to aërial spore-infection, and, secondly, by the physiologist with the obvious statement that the lung remains functionally active as long as life continues. But a closer inspection will, we think, show not only that we may claim its applicability here, but also that it explains the actual condition of affairs better than any other hypothesis. Granting for the sake of argument that tubercle is chiefly contracted by aërial infection (although the great current of recent evidence seems steadily setting toward the view that it enters the system *via* the alimentary canal, and, gaining access to the blood- or lymph-stream, is carried to "points of least resistance" all over the body, the glands, the joint-cavities, the "growth-line" of bones, etc., where it settles and breeds), how are we to account for its peculiar site of attack and development in the apices of the lungs? It certainly cannot be upon any mechanical "settling" or "lodging" principle, for if this were the case then the special filters of the inspired air, the turbinated bodies, would be the commonest seat of attack, the narrowed channel and voluminous pouches of the larynx the next, and the bronchi and the air-cells last of all, which is exactly the reverse of the actual susceptibility. Nor would it seem to be due to a subsidence of the bacilli or spores where the air-current is most stagnant, for even such microscopic particles as they are ponderable and subject to the law of gravitation, and would tend most commonly to fall into and accumulate in the even narrower and more isolated recesses of the *lowest* parts of the lung. Another explanation commonly advanced is that on account of the comparative immobility of the first and second ribs and the pressure of the shoulder-girdle, there is less respiratory movement in this part of the lung than in any other, and hence it is a place of physiologic stasis, a *cul-de-sac*. To which it may be answered, first, that while this lack of "pumping-force" might apply to fluids, it does not at all to gases, and that any tendency to imperfect expansion of the apices would be more than overcome by the tendency of air to seek the *highest* point of cavities, of which the familiar distention of the fundus of the stomach is a case in point; and, secondly, that this expansion does actually take place, so that the apex of the lung is *not limited* by the ribs or even by the clavicle, but extends often *above both* into the yielding tissue of the neck, where anyone who has seen it rising and falling at the bottom of the chasm left after the removal of tubercular cervical glands will be inclined to regard it as really one of the most expansile parts of the organ instead of the least so. The most recent theory is that of terminal blood-stasis, on account of the absence of valves in the pulmonary veins and certain peculiarities in the connections of the veins of the upper part of the lung. But this is opposed by the facts, first, that the apex is really less remote from the source of supply in the roots of the lung than the base, and, secondly, that all pulmonary congestions which are confessedly static in their origin occur at the lowest points,

the base in the upright and the posterior border in the recumbent position.

When, however, we regard the apex of the lung from a comparative and developmental standpoint we find it to be the shrivelling and receding remnant of a cervical extension of the respiratory cavity, whose existence is indicated by the frequent occurrence of one or more cervical ribs, and whose disappearance is part of the general recession of the original body-cavity (cœlom) or pleuro-peritoneal sac. Thus its peculiar susceptibility to disease becomes explicable on the law of the proneness to decay of "senile" or atrophying organs.

As Wiedersheim[1] remarks, "these phenomena (the structural changes of the first rib and apex) should be regarded as degenerative," and the apex falls into the same pathogenic class with the appendix vermiformis.

And not only does this view account for the marked proclivity of disease for a site so inaccessible and otherwise highly improbable as the apex, but it also appears to account for its preference for the right apex, which is in the proportion of three to two. As is well known, upon the right side of the chest we find three lobes and upon the left only two, and as the uppermost right lobe is supplied by an eparterial bronchus, which is not represented upon the left side at all, it is generally believed by morphologists that the superior or special lobe of the right lung is the remains of an eparterial lobe, which was also originally present (but has now completely disappeared) upon the left side, as is the case in many mammals (horse, elephant, seal), and in rare instances as a reversion in the human subject (Dalla Rosa, Bohls). And the apex which is formed by this atrophying lobe is nearly twice as frequently the site of tubercular disease as its fellow of the opposite side. All these may of course be nothing more than coincidences, but to the comparative pathologist they are highly suggestive ones, and of sufficient interest even to clinicians to warrant high expectations of further developments in this field of research.

[1] Structure of Man, p. 179.

PHYSIOGNOMY OF CRIME.

IT is rather startling to read that crime is on such an increase in this country that it is five times more common to-day than it was in the year 1850; yet such is the fact, according to the figures given by General Brinkerhoff, President of the National Prison Congress. These figures are as follows:

Year.	Prisoners.	Ratio to population.
1850	6,737	1 in 3442
1860	19,086	1 " 1647
1870	32,901	1 " 1171
1880	58,609	1 " 855
1890	82,329	1 " 757

This rapid increase suggests either that our whole population will soon be in jail if something is not done to prevent it, or that these statistics need explanation and correction. That there is some error, or at least some unknown factors at work to give this appearance of rapid decline in the public morality of this country, we cannot doubt; but what it is we cannot suggest. It can scarcely be due to increased efficacy of our police and judicial systems, by reason of which more offenders are tried and convicted; it is quite as likely to be due to the increased laxity of our tribunals and pardoning boards, by reason of which more convicts are sentenced a second and a third time, and so go to swell the prison population.

It is very evident, however, that these figures, even if subject to revision, are significant of something radically wrong in our civilization. They show only too plainly that our antiquated criminal laws and law-courts are not meeting the demands of the country in suppressing and controlling crime. These laws and procedures, in other words, are not founded on *scientific* principles; they have not come into line with the advances made in other departments of human knowledge and activity. This is seen at once if comparison is made with some of these other departments. Let us take, for instance, that of public hygiene, which has to do with the conditions and general control of diseases and disease-production. What would be thought if the increase of disease, as shown, for instance, in the mortality-rate, had been at a rate comparable with this increase of crime?

It is not to be wondered at that scientists are beginning to protest against a system of trial and administration which is responsible, even if only in part, for such results. One of the most prominent of the specialists who have attempted to place criminal anthropology upon a scientific basis is Professor Cæsar Lombroso, a translation of one of

whose recent works is now before us.[1] As a rational attempt to master this difficult subject by applying to it a scientific method we shall refer briefly to Lombroso's work and submit it to a necessarily condensed criticism.

In the first place, we may say that we have been much impressed with some of the facts stated by Mr. Morrison in his introduction. He shows conclusively, from the statistics of the New York State Reformatory, that conditions of environment have much to do with the production of criminals; 52 per cent. of juvenile delinquents came from homes which were positively bad, and only about 7 per cent. from homes which were positively good. Again, 41 per cent. left home before or soon after reaching the age of fourteen, while only 1 per cent. were surrounded by wholesome influences at the time of their lapse into crime. This moral aspect of the subject strikes us as of great significance in an introduction to a book which, like Lombroso's, deals almost exclusively with the mechanical and physical aspects of the criminal. Mr. Morrison himself does not point out this latent inconsistency. In all these juvenile criminals we cannot help but think that their vicious environments had more to do with their fall than had the shapes of their skulls and their other purely somatic characteristics. Even their mental and moral traits may have been formed as much by example as by heredity.

It may surprise some to know that Lombroso does not attach first importance to cranial anthropometry. He says distinctly that variations in measurement between the normal and the abnormal cranium are so small as to defy all but the most minute research. He attaches greater importance to the anatomico-pathological anomalies of the female offender, and gives a list of them; a list which only experts can consult and use with profit. He does not ignore general anthropometry, however, but gives it considerable importance; in fact, it occupies large space in his book. In respect to the data collected by Lombroso in these various fields, and which he offers in a startling array of figures, we frankly confess that we should not like to give a hasty and rash opinion. The impression made upon us is that Lombroso's work represents a method and a beginning, but that it may be over-hasty yet for even the most expert to draw from it conclusions which are to be regarded as applicable in the present state of society and criminal law.

Among the anomalies described and classified by Lombroso are those of the head, face, ears, and teeth. The list includes such topics as asymmetry, prognathism, virile and Mongolian physiognomy, peculiarities in the hair, and tattooing. These and innumerable others are submitted to a statistical study, so that the book in parts is much overloaded with figures, which may add to its scientific value, but which detract somewhat from its interest. On the debatable ground of tattooing, where Lombroso has been freely criticised, we do not think that he makes out much of a case for the female offender. The most curious induction drawn by him is that in the simplicity of her tattooing, as compared with the male, the female offender furnishes an example of atavism, since she tends to revert to the practice of the women of savage tribes, who notoriously are less tattooed than the men.

In some parts of his book Lombroso abandons his more strictly mechanical work and attempts to give the mental traits of the female offender, especially in crimes of passion. As a psychological study this attempt does not seem to us to establish satisfactorily anything distinctive. The passions and crimes of these offenders are strictly conventional, and only lead to the conclusion that those who displayed them were in a general way without moral control; *i. e.*, that they were criminal.

The chapter on hysterical offenders is to us the least satisfactory in the book. It is not a scientific study of hysteria according to the approved modern ideas of that disease. It is, in fact, exceedingly superficial and uncritical. Lombroso, following the bad example of Legrand du Saulle, hopelessly confuses hysteria with all forms of moral depravity and degeneracy. He brings an indiscriminate charge against hysteria of producing liars, thieves, and murderesses, but the symptoms and mental traits that he enumerates are almost without exception not those of the great neurosis. We emphatically dissent from the method followed and the results obtained in this chapter.

The fact that true hysteria is not common in, much less identical with, criminality is curiously shown by Lombroso in a study of the visual fields of female offenders. These criminals present rather frequently scotomata and a rather characteristic peripheral irregularity of the visual fields (marked,

[1] The Female Offender. By Professor Cæsar Lombroso and William Ferrero. With an Introduction by W. Douglas Morrison. New York: D. Appleton & Co.

for instance, by great peripheral depressions). But the author distinctly says that the absence of the special visual characteristics of hysteria proves that the moral and functional anomalies of criminals are not due to hysteria. This is in strong contrast with his other statements about hysteria, to which we have just taken exception. His chapter on the acuteness of all the special senses in criminals is a very close study.

Lombroso also devotes special chapters to the characteristics of the born criminal and the occasional criminal. We have not space to present these sketches, but we may say that their outlines are perhaps rather misty for the practical purposes of criminal jurisprudence as this is at present practised.

On the whole, Lombroso's work, as exhibited in this book, presents us with a method rather than with fully accomplished results. The value of this method must yet be tested by experience founded upon work by more than one man and in a wider field, and by the verdict of a yet somewhat remote future. We are impressed, however, with the importance of this method, and with the hope, even belief, that it will yet do much to solve some of the grave sociological questions that have to do with the production and the control of crime.

We ought not to omit to mention, perhaps, that Lombroso has exhibited to us, in this book, photographs of the skull of Charlotte Corday. The readers and admirers of Lamartine[1] will perhaps learn with dismay that this "Angel of Assassination" has presented to modern science a large number of anatomico-pathological anomalies in her cranium!

ECHOES AND NEWS.

PROF. V. BRUNER, Director of the Anatomical Institute at Rostock, is dead.

DR. J. M. DACOSTA has been re-elected President of the College of Physicians of Philadelphia.

DR. LEONARD PEARSON, of Philadelphia, has been appointed Pennsylvania State Veterinarian.

DR. AUGUST BIER has been elected Extraordinary Professor of Surgery in the University of Kiel.

DR. SAMUEL G. DIXON has been elected President of the Philadelphia Academy of Natural Sciences.

DR. WILLIAM E. HUGHES, of Philadelphia, has been elected President of the Delaware Valley Ornithological Club.

PROF. WICHERKIEWICZ, of Posen, has been elected to the Chair of Ophthalmology in the University of Cracow.

DR. WILLIAM PEPPER, of Philadelphia, has been elected one of the Vice-Presidents of the American Philosophical Society.

PROF. P. EHRLICH has succeeded to the Chair of Special Pathology and Therapy in the University of Berlin, formerly occupied by the late Prof. A. Hirsh.

PROF. V. HÜFNER, of Tübingen, has been called to the Chair of Physiologic Chemistry in the University of Strassburg, rendered vacant by the death of the late Hoppe-Seyler.

DR. LUDWIG RÜTIMEYER, Professor of Comparative Anatomy at the University of Basle, and well known for his paleontologic investigations, died recently at the age of seventy-one years.

PROF. BRAUN, of Königsberg, has been called to the Chair of Surgery in the University of Göttingen, in succession to König, who was recently made a member of the faculty of the University of Berlin.

THE Section on Surgery of the New York Academy of Medicine at its regular meeting last Monday night elected Dr. B. Farquhar Curtis, of 307 Madison Avenue, Chairman, and Dr. John B Walker, of 33 East Thirty-third Street, Secretary.

THE UTILITY OF STATE MEDICAL EXAMINATIONS is again demonstrated by the announcement that the Pennsylvania State Board of Medical Examiners recently rejected 22 out of 76 applicants for a licence to practise medicine in that State.

THERE has recently been resurrected in the document-rooms of the Senate in Washington an old claim of Issachor Zacharie, a former chiropodist of New York, against the Government, amounting to $45,000, for treating corns and bunions of soldiers in the War of the Rebellion.

THE THIRD INTERNATIONAL CONGRESS FOR PSYCHOLOGY will be held at Munich, from August 4 to 7, 1896. The following subjects will receive discussion: Psychophysiology, Psychology of the Normal Individual, Psychopathology, Comparative Psychology. The official languages will be German, French, English, and Italian.

DR. CONAN DOYLE pleads the American view of the Venezuelan dispute. He exposes the faults and arrogance of the English Yankee-haters, and proposes that an Anglo-American Society be started in London, with branches throughout the empire, with a view to promoting good feeling and furnishing the English with the American side of questions that may arise, and *vice versa*.

PROF. RUDOLF LEUCKART, the distinguished zoölogist, celebrated the fiftieth anniversary of his accession to the

[1] See his sketch of Charlotte Corday in his "History of the Girondists."

doctorate on December 13th. In 1850, at the age of twenty-eight years, he was made Extraordinary Professor of Zoölogy at Giessen, and in 1885 Ordinary Professor, and also Professor of Comparative Anatomy. Since 1875 he has been Professor of Zoölogy and Zootomy at Leipsic.

DR. GEORGE DOCK, at present Professor of Practice of Medicine and Pathology in the University of Michigan, Ann Arbor, has been elected Professor of Pathology and Bacteriology in the Jefferson Medical College, Philadelphia. Formerly he held the Chair of Pathology in the University of Texas, at Galveston. Though still a young man, he has a reputation as a pathologist and as an original investigator in bacteriology.

THE senior officers of the service have submitted a bill for Secretary Herbert's approval reorganizing the personnel of the Navy. In the Medical Department this contemplates increasing the number of assistant surgeons to fifty, with the title of junior surgeon and the rank of junior lieutenant. Passed assistant surgeons are to be known as surgeons, while those now in the grade of surgeons are to be staff surgeons.

THE Commissioners of Charities have appointed M. J. Rickert Deputy Warden of Bellevue Hospital. The position is a new one, created by Mayor Strong's new Board of Charities. Mr. Rickert is forty-five years old, and has been connected with Bellevue for twenty-five years. He passed the best civil-service examination in a contest with twenty-five applicants for the position. The salary of the Deputy Warden is $1200 a year.

AT the request of Dr. Landon Carter Gray we warn the profession against a man who is canvassing among physicians of New York, representing himself as connected with the American Union Life Insurance Company, stating that Dr. Gray is the Medical Director, and soliciting them to apply for the position of Medical Examiner, at the same time asking from each a fee of $3. He is an impostor in every particular and the profession should beware.

A NEW lunacy law has been prepared by Assemblyman Horton, of Wayne County, who will introduce at once to the New York Legislature a bill relating to the examination of alleged lunatics prior to being pronounced of unsound mind. The bill provides that none but State insanity experts may examine persons whose sanity is brought into question; that the experts must form their judgment solely from the examination and not from testimony, and that the experts must be strangers to the persons examined.

MRS. CATHARINE HATCH died on January 1st at her home, No. 102 West Thirty-fourth Street, of cancer. Her case became famous some months ago, when Dr. Edward W. Burnette developed a cancer while treating her, from which he subsequently died. Although the secular press jumped to the conclusion that this case demonstrated the contagiousness of cancer by inoculation of the cancer-cell or germ, it has not been accepted as such by the best medical authorities. Mrs. Hatch, it was alleged, had contracted the disease by using a speaking-tube previously used by an infected person, but this was never proved, and she declared that the disease with her was hereditary.

THE INFLUENCE OF THE ANTITOXIN UPON THE MORTALITY FROM DIPHTHERIA IN FRANCE.—At a recent meeting of the Paris Academy of Medicine MONOD (*Médecine Moderne*, 1895, No. 101, p. 783) presented statistics demonstrating the influence upon the mortality from diphtheria in France exerted by the antitoxin since its employment from November, 1894. The following figures represent the number of deaths from diphtheria during the first six months in eight years in 108 French cities having a population of more than 20,000:

	1888–94. Average.	1895. Average.
January	469	205
February	466	187
March	499	155
April	442	160
May	417	113
June	333	84

THE success of a young physician in obtaining the position of assistant in one of our State Asylums evidently excited the cupidity of an obscure but aspiring M.D., and elicited the following unique communication to him:

DECEMBER 13, 1895.

DEAR DOCTOR: I see by the papers you have been appointed as junior physician to ——— Asylum. I am reading for examination some as similar position you hold. Please give me some points as to preliminary qualifications, etc. I will pay you for your trouble if you give me points that will help me Give the branches that counts and the per cent.

I am 35, have had 10 years general practice, 2 private. Habits good, chew some tobacco, can give good ref. as to character, etc.

If you know or have your question you can give me a good idea of what I ask.

Your respectfully, * * * *

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PUBLIC HEALTH.

Stated Meeting, January 10, 1896.

HENRY DWIGHT CHAPIN, M.D., CHAIRMAN.

THE MILK-SUPPLY OF NEW YORK CITY.

DR. GEORGE B. FOWLER, Health Commissioner, presented certain charts prepared from the records of the Board of Health, showing some of the more prominent facts connected with the present supply of milk to this city. He said that on an average there were brought daily into the city 19,164 cans of milk, each holding 40 quarts, and that 78.8 per cent. of this large quantity came from New York State alone. The practical bear-

ing of this fact was evident when one considered the need of certain legislation regarding the control of the milk-supply. At present the State Board of Health had an insignificant sum of money at its disposal with which to pay salaries and reimburse owners of cattle when these were slaughtered to prevent the spread of disease. They had only five inspectors for the whole State. Over 6500 persons deal in milk in this city. The Health Department has made 72,036 inspections of milk during the year, has investigated 106 complaints from citizens, has arrested 408 persons for selling impure milk, and has been the means of collecting over twelve thousand dollars in fines from those brought to trial.

Dr. Edward W. Martin described some of the methods employed for preventing the sale of adulterated milk in the city. He said that for convenience the city was divided into six inspection-districts, corresponding to the judicial districts. When the inspector found by testing milk with the lactometer that it was apparently decidedly below the standard, he made careful notes of his observations, and prepared two sealed samples of milk. One of these was sent to the department-chemist for analysis, the other was delivered to the milk-dealer, so that the latter could, if he so desired, have it analyzed independently of the Health Board. If the analysis and other facts recorded in a given case seemed to justify the arrest of the dealer, this was the next step taken. A careful record of such arrests was kept, and it was interesting to note that in the case of one milk-dealer in New York City there had been, from 1887 to 1893, six arrests made, and his total fines amounted to one thousand dollars. Notwithstanding this extraordinary record, the speaker said, this man was still in the business. About 99 per cent. of all the adulterations of milk investigated proved to be either the addition of water or the removal of cream.

Dr. Ernest J. Lederle spoke of the methods employed in the chemical analysis of milk. He said that at the very outset it was most important to observe certain precautions, otherwise it would not be possible to obtain for analysis a fair sample of the milk. The first precaution was to see that the milk was not acid, for if it were there would be a certain amount of separation of the casein. The next most important point to observe was regarding the churning of the milk. If it had been churned, the fat-globules would be separated, thus preventing one from securing a fair sample for analysis. The milk in the sample-bottle should be mixed thoroughly, but this agitation must be very gentle. Experience has shown that this mixing could be best accomplished by gently inverting the bottle ten times. Where it was only required to determine the total solids, 5 c.c. of the milk were placed in a small dish made of lead and tin, and evaporated to dryness over a water-bath, observing the usual precautions for securing perfect dryness of the residue before weighing. By weighing the dish both before putting in it the sample of milk and after this had been reduced to a dry residue, it was easy to compute the weight of the total solids. This should represent about 12 per cent. The total solids were divided into two groups—those consisting of fat and those not fat. The latter included the casein, albumin, milk-sugar, and salts. If it were required to determine the amount of ash, then a platinum dish must be used, and the residue ignited at a low red-heat. The quantity of ash is quite constant, being about 75 per cent. The determination of the amount of salts indicates whether or not the milk has been adulterated by the addition of water. If the addition of an acid to the ash causes effervescence, it is evident that some carbonate has been added as an adulteration to the milk.

The amount of butter-fat was determined by a rather more difficult process. A strip of filter-paper, 22 by 2 inches, especially prepared for this purpose so as to be free from fat, is rolled up into a small cylinder and made to imbibe the sample of milk. In this way the five grammes of milk are spread over a very large surface. The cylinder of paper is next placed in a sort of distilling apparatus, called an "extraction-apparatus," where it is subjected to the action of ether until all the fat has been extracted from the bibulous paper. This ethereal solution of fat is next evaporated, and on weighing the residue one obtains the quantity of fat. The law here requires that milk shall contain only 3 5 to 4 per cent. of butter-fat, but this is a direct invitation to adulteration. On an average, the milk coming into New York City contains about 4 per cent. of butter-fat, and the law should require this amount.

The speaker next described several of the more simple tests for milk. He first described the lactometer. This instrument, which is a form of hydrometer, is graduated into one hundred equal parts between the zero and 100 on the scale, so that each division represents 1 per cent. To use it it should be very gently immersed into the sample of milk contained in a suitable cylinder, care being taken not to splash the milk up on to the stem of the instrument. Unless the milk is at a temperature of 60° F., the temperature at which the lactometer is graduated, a correction must be made for the temperature. If the instrument should float in the milk at 90°, it would indicate that the sample contained an added ten parts of water. As cream is lighter than milk, it was evident that the removal of the cream raised the specific gravity of the milk, and thus made it yield a higher reading on the lactometer. From this some observers had been led to state that the lactometer was an entirely unreliable instrument, as the instrument might stand at the same point in two samples, one of pure, rich milk, and the other a sample adulterated by removing the cream and adding water. But it should be remembered that the milk-inspector is expected to make use of judgment and experience, and if this were done, there was not the slightest danger of making any mistake. For example, when lifting the lactometer out of a sample of rich milk, one would notice that the stem of the instrument was greasy and that the milk clung to it, whereas if the milk were of poor quality this greasiness would not be seen, and the milk would run off the stem very much as water would do. If, therefore, the lactometer read below 100 at 60° F., the milk was undoubtedly impure; if, on the other hand, the reading was above this point, the inspector must use his judgment and experience in passing on the milk.

The amount of cream could, of course, be roughly determined by allowing it to rise to the surface of a sample of milk contained in a simple graduated tube. It could be quite accurately determined by an instrument called the lactoscope. This is constructed

on the principle that the richer the milk the more water must be added to it in order that it shall become sufficiently translucent to admit of reading through it certain black lines on the inner cylinder of the instrument. A practised observer would soon learn his personal equation, and would not then make an error of more than 25 per cent. in the use of this instrument. Another very quick and quite reliable method of estimating the percentage of butter-fat was by means of a centrifugal machine. With this the error should never exceed 0.5 per cent.

Dr. Rowland G. Freeman then read a short paper on the

SIGNIFICANCE OF MICRO-ORGANISMS IN MILK.

He said that the non-pathogenic micro-organisms were for the most part derived from the dust of the building in which the milk is handled, from the dirt on the cow, etc. It was not improbable that some of these micro-organisms now classed as non-pathogenic were concerned in the production of diarrhœa in children, and they certainly caused souring of the milk; but it was most important to remember that the same loose dairy methods that were responsible for the introduction of the non-pathogenic bacteria were also the cause of the contamination of the milk with the pathogenic forms. These micro-organisms could be detected by staining, by culture, by inoculation into animals, and also by their disastrous effects on the consumers. Undoubtedly many epidemics of typhoid fever, diphtheria, and other infectious diseases have been caused by such impure milk, but there were many technical difficulties in the way of demonstrating the presence in milk of these pathogenic bacteria. The speaker said that probably 7 per cent. of all the cattle in New York State were tubercular, and in our city milk small numbers of tubercle bacilli were frequently present. The tuberculin-test was a most delicate one for tubercular disease, and by its use, in conjunction with wise legislation, we might hope in the future for a better milk-supply.

Dr. Henry M. Coit, of Newark, N. J., the originator of the plan of "certifying milk," gave a short account of how he had come to establish this practice, and what results had been secured. After describing the obstacles he had had to encounter during two years of effort to secure a better milk-supply for cities, he said that it had finally occurred to him that by interesting the medical profession the matter might be taken into their own hands. With a committee of seven or eight representative physicians in Essex County the work had been begun, and after considerable search they had found a dairyman who lived up to the terms of a very stringent contract. Under this contract several experts were employed by the committee and paid by the dairyman, and when they were satisfied that the provisions of the contract were fulfilled they were empowered to certify to the character of the milk-supply. The physicians on the committee were not allowed to have any financial interest in the work. The dairyman who had met with the approval had found in the course of the two years in which this plan had been tried that his daily output of milk had increased from 800 quarts to over 2000 quarts, so that the system could be considered a commercial success. It had also been the means of stimulating neighboring dairymen to increased efforts to improve their product. By proper supervision at the dairy it had been possible to secure a milk of uniform nutritive value, and other important information regarding the effect of different feeding of the cows on the quality of the milk had been secured. The committee had not been able to give the bacteriological side of this question as yet much consideration, although in certain special experiments carried on during the summer it had been found possible to reduce the number of micro-organisms to less than 3400 per cubic centimetre. Dr. Snow, of Buffalo, had already introduced this system of certifying milk into that city.

REVIEWS.

Electro therapeutical Practice. A Ready Reference Guide for Physicians in the Use of Electricity. By Charles S. Neiswunger, Ph.G., author of *Suggestions in Electro-therapeutics;* Professor of Electro-physics, Post-graduate Medical School of Chicago. 128 illustrations. Chicago, 1895.

This little work of eighty pages records the *modus operandi* in the treatment electrically of upward of one hundred and fifty diseased states which vary widely in their character. The treatment of abortion, asthma, chancroids, corns, epilepsy, locomotor ataxia, carcinoma, suppurating wounds, and a number of other conditions is detailed. In the treatment of such conditions no one save the most enthusiastic electro-therapeutist would expect material benefit from the use of electric currents.

The book would appear to be misleading to the practitioner of medicine whose experience with electro-therapeutics has been limited. It cannot be said that the object of the book, "as an aid to the more rational use of electricity in the medical profession," is entirely fulfilled.

The Theory and Practice of Counter-irritation. By H. Cameron Gillies, M.D., London. New York: MacMillan & Company, 1895.

A careful and philosophic study of therapeutic methods concerning which our empiric knowledge outruns our understanding is to be found in the book before us. The author has with considerable care collated from his own experience and from reading the various conditions in which counter-irritation is useful, and has shown its limitations and its applications. The introductory historic chapters are interesting and suggestive. The general principles are clearly set forth. The author believes that the term "counter-irritation" itself is a misnomer, and argues that whatever good comes from the use of external irritants is because they stimulate the activity of the tissues of the part to which they are applied, accelerate the blood supply, and increase nutrition or repair. The defect in this proposition is that it fails to explain why blistering the chest, for example, should be more useful in pleurisy than blistering the heel. There is here, certainly, no such direct connection between the tissues to which the blister is applied and the structure upon which the remedial influence is exerted, as would be required by the author's theory.

TWENTIETH CENTURY PRACTICE. AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume IV. Diseases of the Vascular System and Thyroid Gland. 8vo., pp. 841. New York: William Wood & Co., 1895.

THE fourth volume of this great undertaking contains contributions by only four authors. The first is by Dr. James T. Whitaker, and deals with Diseases of the Heart and Pericardium, occupying altogether 454 pages. In this most elaborate monograph, covering all the varied phases of the subjects treated of, has been incorporated a vast mass of facts, whose value, it is to be regretted, is impaired by looseness of expression, unattractiveness of style, unnecessary verbiage, indiscriminate arrangement, and a failure to digest adequately the data presented. The second article is on Diseases of the Bloodvessels, and has been ably written by Dr. A. E. Sansom. It occupies 184 pages, and is characterized by the care and precision for which this well-known clinician is noted. Diseases of the Lymphatic Vessels are quite fully discussed in 45 pages by Dr. Bertrand Dawson, and a liberal bibliography is given. Diseases of the Thyroid Gland, including Myxœdema, Cretinism, Exophthalmic Goitre, Goitre, Malignant Disease, Thyroiditis, Tuberculosis, Hydatid Disease, Syphilis, and Actinomycosis are admirably presented within 131 pages by Dr. George R. Murray, who was the first to use systematically thyroid gland in the treatment of myxœdema, and thus comes peculiarly well equipped for the performance of his task. An extensive bibliographic table will be useful to those who may care to study these subjects independently. Reference is facilitated by an index of 18 pages. The book makes a good appearance, being well printed in clear type on paper of good body, and being well bound.

LA METHOD BROWN-SÉQUARD. TRAITÉ D'HISTOTHÉRAPIE. LA THÉRAPEUTIQUE DES TISSUS. COMPENDIUM DES MÉDICATIONS PAR LES EXTRAITS D'ORGANES ANIMAUX. Par M. BRA. Paris, 1895.

UNDER this array of titles Dr. Bra presents the history and literature of organotherapeutics. Introductory letters by Constantin Paul, Mendel, Ewald, Bruns, Emminghaus, and Byrom Bramwell precede the author's own introduction. All of these authors, though commending the general plan and purpose of the work, are noticeably guarded in their support of organotherapeutics, with exception of the thyroid treatment. Undoubtedly this is the present attitude of the profession to the whole question, but not the less on this account is the work before us interesting and instructive.

Written by one who has been from the first (1889) a pupil and disciple of Brown-Séquard, we are not surprised to find a degree of reliance in testicular fluid as a therapeutic agent accorded by few, and certainly not established by the evidence at hand. The author presents at great length (150 pages) the entire literature of this subject, good and bad, scientific and unscientific. The subsequent chapters on cerebral, thyroid, cardiac, pancreatic, hepatic, suprarenal, muscular, renal, pulmonary, splenic, medullary, and lymphatic therapeutics are equally full and comprehensive.

As a compendium of the literature of these subjects, the work is most admirable; but there is not, as there cannot be, any evidence of definite system, and the mass of material is presented without the coherency that would carry conviction. We end as we began on taking up the book with the feeling that the accumulated evidence will not permit a doubt of the value of the thyroid treatment, and that, so far as the other extracts are concerned, there is a plentiful lack of crucial demonstration.

As an almost cyclopedic presentation of the literature this book may be warmly recommended. and it will be found most useful for the many details of methods of preparation and administration of the remedies with which it deals.

GUY'S HOSPITAL REPORTS. Edited by E. C. PERRY, M.A., M.D., and W. H. A. JACOBSON, M.A., M.Ch. Vol. LI., being vol. XXXVI. of the third series. 8vo., pp. 272. London: J. & A. Churchill, 1895.

WE have learned to look forward with expectant interest to the annual publication of *Guy's Hospital Reports*, with the confident feeling that the year will not have passed without yielding evidences of advance in medical science and art; and this year's *Reports* is no exception to the rule. The present volume contains eleven original articles, all of which are of a high order and some of which are especially noteworthy. Hale White and Channing Pearce contribute an article on Empyema Following Lobar Pneumonia, to which they append reports of twenty-six cases. L. A. Dunn describes a unique Case of Multiple Atrophying Sarcomata of the Head and Neck. John Fawcett records the details of an investigation showing that urine containing piperazin in solution has no solvent effect upon uric-acid calculi; that piperazin fails to relieve the pain of gout and to increase uric-acid elimination; and that it has little or no effect when given to birds in whom uric-acid deposits have been produced by injections of potassium chromate. F. Newland-Pedley discusses the Treatment of Suppuration of the Maxillary Antrum, especially with Regard to the Use of a Permanent Opening in Obstinate Cases; and also the Treatment of Congenital Cleft Palate. Theodore Fisher furnishes a paper on Hypertrophy of the Heart without Gross Organic Lesion. G. Bellingham Smith concludes from a study of forty-eight cases of amputation in senile gangrene that this morbid condition is due to a diseased state of the arteries; that when gangrene is confined to the toes the treatment should be expectant and antiseptic; that picking and cutting away of dead structure close to the affected area, as well as amputation, are to be avoided, on account of the liability of reinfection; that when gangrene has reached the dorsal or plantar surface of the foot, a high amputation is indicated—preferably through or above the knee. F. M. Turner is responsible for an interesting communication on Scarlatinal Nephritis and its Varieties. J. Frederick W. Silk undertakes to show that a combination of nitrous oxide and ether forms a most valuable addition to the list of available methods of producing anæsthesia. P. H. Pye-Smith reports an interesting Case of Bilateral Paralysis of the Facial and Auditory Nerves, and cites two additional instances of similar kind. The work is further embellished by a number of woodcuts and five plates.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXVIII. NEW YORK, SATURDAY, JANUARY 25, 1896. No. 4.

ORIGINAL ARTICLES.

MODERN GASTROSTOMY, WITH REPORT OF A CASE.

BY THOMAS S. K. MORTON, M.D.,

PROFESSOR OF SURGERY IN THE PHILADELPHIA POLYCLINIC; CONSULTING SURGEON, PHILADELPHIA DISPENSARY; OUT-PATIENT SURGEON, PENNSYLVANIA HOSPITAL; ASSISTANT SURGEON, ORTHOPÆDIC HOSPITAL.

AT this time the methods of forming a gastric fistule by simply incising the abdominal wall over the stomach and suturing the viscus to the wound-margins must be considered obsolete. The surgeon is not justified in subjecting a patient to the horrors of subsequent leakage of the stomach-contents which such methods almost of necessity involve, so that the state of the sufferer after operation may be worse—owing to excoriation and uncleanliness—than that preceding its performance. Certainly such procedures should be relegated to the list of last resorts, only to be suggested when actual starvation is in progress, the œsophagus is impermeable to fluids, and other operations are impossible.

On the other hand, we have now available two, if not three, methods of performing gastrostomy, in which most of the disadvantages of the older operations are obviated, which can be strongly urged at very early stages of œsophageal stenosis, and can be expected to add enormously to the patient's comfort and welfare.

These are the operations proposed respectively by von Hacker,[1] of Vienna (1886); Witzel[2] (1891); and Ssabanejew,[3] of Odessa (1890). The latter method was apparently devised and practised quite independently by R. Frank,[4] of Vienna, in 1892, and should in justice be denoted, as in the present communication, by the compound name of both of these surgeons. To these methods may perhaps in the future be added the procedure advocated by Hahn[5] (1887). We may dispose of this at once in a few words. It consists of making a straight incision (Fenger's) one or two fingers' breadth beneath and parallel with the left costal border external to the rectus muscle. A small opening is made in the peritoneum through which a finger is thrust up to the eighth intercostal space and cut down upon by a second incision from above. A forceps is thrust through this second cut and the stomach grasped and drawn out far enough to be fastened to the skin-margins between the cartilages. Necrosis of the ninth rib has been noted three times subsequent to this operation, so that, because of this and other feared complications and the introduction of more promising methods, it has not found favor, although its author has been pleased with the results and claims that a sphincteric action of the ribs prevents regurgitation.

The von Hacker method, in brief, requires a vertical incision over the left rectus muscle, blunt dissection of that muscle and of the transversalis in the direction of their fibres, small incision of peritoneum, the stomach grasped as near the fundus as possible and drawn a short distance through the wound by slings of silk or silkworm-gut, fixation of stomach to peritoneum on all sides, sutures at upper and lower angles of the wound embracing the whole abdominal wall and outer coats of stomach, and, finally, tamponade of the middle, unsutured portion of the parietal incision. Two or three days later the stomach is incised in the direction of its vessels and a large tube inserted for feeding. The average result of this operation is very fair, but there is great uncertainty that regurgitation will be prevented, although a sphincter-like action of the separated muscle usually prevents leakage around the tube. It has the advantage of ease and rapidity of execution. Its field is limited largely to desperate cases in which these elements are essential, to certain conditions where ready access for subsequent instrumentation of the œsophagus from below is desirable, and where complications may prohibit or render undesirable the two other operations which are to be described.

Albert and Kocher[1] have modified the von Hacker operation by drawing a cone of stomach through the rectus, suturing its base to the parietal peritoneum, and then carrying its apex beneath a bridge of skin to just below the costal margin, where it is brought out, incised, and the fistule-edges united with the lips of the small wound which transmits it. The functional results are said to be excellent.

The von Hacker operation is distinctly contra-indicated in malignant strictures, where the patient's condition justifies either of the following methods:

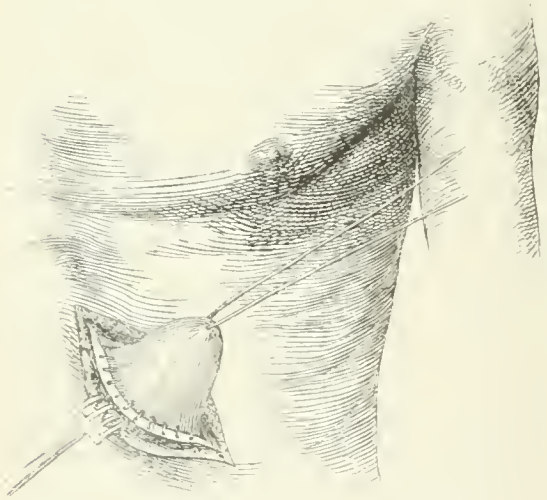
Witzel's procedure is unquestionably the most

[1] Wien. med. Wochenschr., 1886, Nr. 31 u. 32.
[2] Centralbl. fur Chirurg., 1891, Nr. 32, p. 601.
[3] Wien. klin. Wochenschr., 1893, Nr. 13.
[4] Loc. cit.
[5] Centralb. fur Chirurgie, 1890, Nr. 11, p. 193.

[1] Kocher's Operative Surgery, London, 1895, p. 127.

popular of the modern gastrostomy operations. It has the advantages of absolutely preventing external leakage and of closing spontaneously when the tube is left out. On the contrary, it is the most difficult of performance, is more dangerous because of the necessity of opening the stomach before the peritoneum can be sutured, requires the patient to wear a tube and remain near to the physician so that readjustments or reintroductions can promptly be made, and prohibits at any time retrograde or combined instrumentation of the œsophagus. In abstract it is thus performed: Oblique incision parallel to the left costal border, longitudinal incision of the sheath of the left rectus muscle; blunt separation of the fibres of the rectus and transversalis muscles parallel to their course, oblique incision of peritoneum. The stomach is drawn well out upon the abdomen and incised near the fundus just sufficiently to admit the passage of a quarter-inch-diameter rubber tube. The tube is then infolded by Lembert sutures, including the muscular and serous walls for a distance of one and a half inches upward in the oblique direction of the external wound and for at least half an inch below the entrance of the tube into the viscus. Next the stomach is dropped back and sutured to the parietal peritoneum all around the abdominal incision, thus closing off the operative field from the peritoneal cavity; and, finally, the abdominal incision, down to, but not including peritoneum, is closed, leaving only a snug-fitting opening in the upper portion

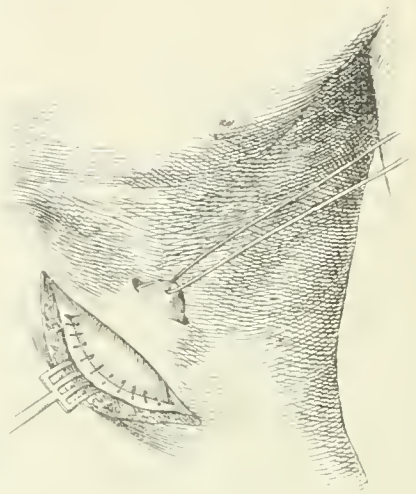
Fig. 1.



Cone of stomach drawn through incision and its base sutured to peritoneum. (Meyer.)

for the exit of the tube. Feeding, of course, may be done immediately. The long, oblique, valve-like opening effectually prevents leakage of stomach-contents, even in the absence of the tube. Great difficulty may be experienced in reintroduction of the tube should it, for any reason, be left out for a longer period than a few hours or even minutes. The fistule has remained perfect for many months in some cases, and in at least one instance has closed spontaneously when the tube was no longer worn.

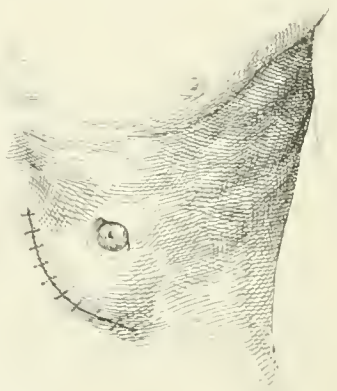
Fig. 2.



Cone of stomach drawn under bridge of skin and through upper wound. (Meyer.)

In the Ssabanejew-Frank operation a three-inch, or longer, straight incision is made one finger's breadth beneath the left costal border. The underlying muscles are bluntly separated in the direction of their fibres, and the peritoneum opened in the same direction and to the full ex-

Fig. 3.



Abdominal wound closed off. Stomach opened and margins of fistule sutured to edges of upper wound. (Meyer.)

tent of the external wound. The stomach is drawn out and a long silk or silkworm-gut sling is passed through the outer coats at a point near the cardiac extremity. A cone of stomach is then drawn out to an extent of from one and a half to two inches through the wound. Steady traction

for a short time upon the sling or slings may be required to accomplish this. Then the peritoneal edges of the wound are neatly united to the serous coat of the stomach in all directions, thus at once shutting off the abdominal cavity. The muscles may likewise be sutured to the stomach if time permits. A second incision, one-half inch long, is

FIG. 4.

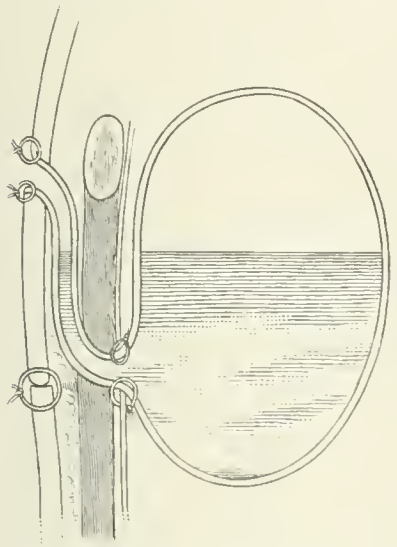


Diagram representing valve formed in Ssabanejew-Frank operation. (MEYER.)

now made about an inch above the costal border, parallel to and about the centre of the first. This is carried through skin only. The bridge of skin separating the two wounds is next separated from the cartilages by blunt dissection and the sling-thread passed beneath. Traction upon this brings the apex of the cone of stomach out of the upper wound; the original abdominal incision is then closed. Finally, the projecting portion of stomach is incised to the extent of half an inch and its mucous membrane sutured to the skin-margins of the smaller wound. Feeding may be immediate. The valve formed by the indirect opening into the stomach, and compression of the fistulous canal between the bridge of skin and the costal cartilages, has, in all cases reported, proved to be almost, if not quite, as perfect as that of Witzel. In addition, no tube need be worn, the patient can feed and care for himself, and, probably, retrograde or combined instrumentation of the œsophagus can readily be executed through it. I say probably, because it has but twice (Winslow's cases), to my knowledge, been attempted or accomplished, although I could easily pass my finger into the stomach of the case to be described without apparent disadvantage.

Ssabanejew and Frank have each performed this operation four times and secured a perfect-working fistula in every case. Meyer, of New York, to whom is due almost the entire credit of having introduced and popularized the modern gastrostomy operations in America, and to whose writings I am indebted for many of the facts, as well as the illustrations here presented, has reported three additional cases in an admirable article,[1] in which he reviews the history and minutiæ of all the proposed methods. One of his cases died on the following day; there was no leakage. The second lived seven weeks with a perfect, non-leaking fistula. A third, owing to complications incident to a preceding von Hacker operation, was not satisfactory.

Randolph Winslow[2] has reported two successful operations by this method, and was much pleased with the workings of the resultant fistules. Both were undertaken for cicatricial stenosis. One was a colored boy three years old. The artificial opening worked admirably for a year, when the little fellow died from the effects of an œsophagotomy. It was found to be perfectly feasible to practise retrograde instrumentation of the œsophagus through the dilated fistule in this case. Winslow's second case was also in a colored child, aged one year and nine months. Some suppuration followed as a result of food getting into the wound when he was fed through the fistule at the time of operation. The contents of the stomach were not so well retained in this case as in the first, yet the artificial opening acted very satisfactorily. Four months later a small bougie was passed into the stomach, and later a string was passed from the mouth through the fistule and used as a saw with which to divide the stricture. A perfect restoration of the calibre of the œsophagus resulted from subsequent dilatation with bougies, and, as the fistule was no longer required, its edges were freshened and sutured. Satisfactory closure at once resulted.

Dr. Max J. Stern, of Philadelphia,[3] operated by this method in the spring of 1894 with excellent functional result for a few days, when bronchitis produced a fatal result.

My own case, October, 1894, next follows in order of precedence; and, finally, Finney,[4] in December, 1894, performed this operation in a case of carcinoma of the œsophagus in a man aged fifty years. The stomach was not opened until "a day or two later." Ten days later, when the report was made, the fistula was working most sat-

[1] Recent Methods of Gastrostomy for Stricture of the Œsophagus, by Willy Meyer, M.D. Am. Jour. Med. Sci., October, 1894, p. 400.

[2] Annals of Surgery, May, 1895, p. 543.

[3] Personal communication.

[4] Bull. Johns Hopkins Hospital, February, 1895, p. 32.

isfactorily and not the slightest leakage had taken place.

In a subsequent communication[1] Finney states that his patient lived six and a half months and died of inanition. The action of the fistule was perfect, and leakage never occurred.

H. R., a Russian, aged fifty-one years, came to me at the Polyclinic Hospital at the suggestion of Dr. Frank W. Talley on October 4, 1894. His medical history was that of excellent health until five months previously. He had never swallowed any corrosives or sustained any injury of the throat or œsophagus. The first sign of difficulty was a little obstruction to the passage of large masses down the gullet while eating. Following this, smaller and smaller boluses were impeded or actually regurgitated. Coffee-ground material was next passed in the stools from time to time. Blood was never regurgitated or vomited. He had little or no pain; only complaining of weakness and difficulty in deglutition. Nothing but liquids could be swallowed. He had lost much flesh and was quite anæmic. Examination negative excepting œsophagus, where an obstruction was located 12 inches from the teeth and diagnosed to be probably carcinomatous. It was ascertained that the largest bougie that could be passed without force measured ⅜ inch. The constriction appeared to be about an inch in vertical extent. No bleeding followed the instrumentation.

Operation was at once proposed, as it is my belief that in all cases it is best to make a fistule so soon as emaciation begins to make itself manifest, or, as Meyer puts it, as soon as the scales show progressive loss of weight, and while the patient still has sufficient strength to bear the operation well and to ward off the bronchitis or pneumonia which kills so many gastrostomy-subjects when the operation is undertaken as a last resort.

He was liberally fed upon fluids that would pass the stricture, and while in the hospital gained considerable weight and color; but, as operation was refused, he was discharged two weeks after admission. During this time, with the kind assistance of Dr. S. Solis-Cohen, an attempt was made to pass the gastro-diaphane, but without success, owing to the tightness of the stricture. No blood was vomited or passed while he was under observation.

On October 25th he re-entered the hospital willing to submit to anything necessary to afford relief from torturing hunger, for meanwhile obstruction had become almost complete and only small quantities of fluids could be swallowed, and this with the greatest difficulty.

On October 29th, with the valued assistance of Dr. Max J. Stern, operation after the method of Ssabanejew-Frank was performed. An incision, 3½ inches long, paralled to and ¾ inch below the left costal arch, was made to the outer side of the left rectus muscle. The peritoneum was exposed and opened to the same extent. Edge of liver presented, but was pushed upward to the right, where it gave no further trouble. The stomach then came into view. It was identified by its general appearance, the direction and size of its vessels springing from the greater curvature, the origin of the omentum, and, finally, by passing a silkworm-gut suture through the serous and muscular coats, and, while traction was thereby made upon the organ, passing a finger along the upper surface until the entrance of the œsophagus into the viscus as well as the œsophageal opening of the diaphragm was accurately made out. The tumor could not be reached by the examining-finger. The organ was then strongly drawn upon by means of the suture in its wall. Thus a cone of stomach-wall 3 inches high was pulled out of the wound. Now it was seen that a suture placed 1½ inches nearer the œsophagus would approximate the base of the cone that much nearer the cardiac orifice. So another strong stitch was passed at the point indicated and the first one withdrawn. While this 3-inch cone of stomach was held out (the suture occupying the apex), a continuous suture of silk was run in three sections around its base as it emerged from the peritoneal wound. This suture united the serous and muscular layers of the stomach to the parietal peritoneum. At one or two points where approximation did not appear to be perfect an extra interrupted stitch was afterward taken. Next, an incision parallel to the first was made ¾ inch above the costal border and 1½ inches above the first or abdominal incision. This cut was ¾ inch long and was carried down through the skin only. By blunt dissection the second incision was made to communicate with the first by undermining the bridge of integument between. Now the stomach tension-suture was grasped by a forceps thrust through beneath the bridge of skin, and brought out through the upper incision. Traction upon it easily caused about one inch of the cone of stomach to protrude from the upper wound. While this was held in position the original abdominal wound was closed by interrupted silkworm-gut stitches carried down to, but not through, the peritoneum. This done, acetanilid was rubbed into the line of sutures and that opening effectually sealed off by a dressing of collodion and gauze. Then the projecting cone of stomach was opened to the extent of ⅝ inch through all of its coats in a direction corresponding to that of the cutaneous wound. The serous edges of the gastric incision were then turned over and sutured to the margins of the skin-wound. Bleeding was active from the incised stomach-wall, but soon ceased spontaneously. No outflow of gastric contents took place during or after the operation, although the patient was violently ill from the ether-anæsthesia, and the stomach-contractions were of visibly great violence owing to the œsophageal obstruction preventing vomiting. It was thought best not to feed the patient through the fistule until nausea had passed off. Washing out the viscus would have been exceedingly easy to perform, but was considered unnecessary. After acetanilid had been rubbed into the junctions of the skin and mucous membrane, a bit of protective was placed

[1] Bull. Johns Hopkins Hospital, September-October, 1895, p. 145.

over the exposed surfaces and a sterile gauze dressing applied over all and held in place by a many-tailed binder.

Rectal enemata were employed for twenty-four hours, when feeding by the fistule was commenced. Some bronchial irritation and severe cough followed the operation, but did not prove serious; no leakage took place, and no suture tore out. Primary union of the abdominal wound was secured and convalescence was uneventful. Pains were taken that the man should sit up in bed almost at once after the operation and to get out of bed within a week, so as to ward off the strong inclination to pneumonia to which these cases are so subject.

In two weeks the patient returned to his home and subsequently cared for himself perfectly with the aid of his wife. Neither of them was possessed of much intelligence, yet no trouble with the fistula occurred during the five months that he lived subsequent to the operation. The apparatus for feeding consisted of a rubber tube ⅜ inch in outside diameter and ¼ inch calibre, attached to a half-pint funnel. Through this he could feed himself with fluids with the greatest ease and expedition. Sometimes he would chew up solid food, dissolve it in fluid, and then inject the mixture as usual by gravity. By this expedient he got the digestive effects of saliva and some of the pleasure of eating. Hunger, however, was usually well satisfied by feeding through the tube. A few days after the operation, owing probably to lack of irritation incident to attempts at swallowing food, the stricture dilated and permitted of rather free deglutition; but this ease in swallowing proved of short duration, for in a week the œsophagus finally closed to the passage even of fluids. He gained constantly in weight and strength during the five months that he lived, and even had returned to his occupation as tailor, when he was taken unexpectedly with a hemorrhage (upward) from the œsophagus which almost at once killed him. Owing to the religious principles of his family no post-mortem examination could be secured.

On December 14, 1894, he was presented to the Surgical Section of the College of Physicians and the perfect working of the fistule demonstrated, as well as the ready method of feeding. During the period which elapsed between his leaving the hospital and his death I took many opportunities to see him and always found the gastric opening tight, with no surrounding excoriation.

HYPO-LEUCOCYTOSIS IN ACUTE TUBERCULOSIS.

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THE differential diagnosis between general miliary tuberculosis and typhoid fever is very difficult, and so closely do cases of the tubercular affection simulate the latter disease that it is no uncommon hospital experience to see them mistaken for cases of fever and treated as such. In the majority of these cases the true state of affairs is revealed only at the post-mortem table. Points of differential diagnosis have therefore been carefully sought for, and it has been hoped that the examination of the blood in suspected cases might throw some light upon the question.

It has been demonstrated beyond doubt that in typhoid fever there is a constant diminution of the leucocytes; and the statement has been made by some writers that in acute tuberculosis the opposite condition of leucocytosis occurs, so that this has been made a differential point. Osler, in his *Text-book of Medicine*, in the paragraph on the diagnosis of general miliary tuberculosis, makes the statement that "leucocytosis occurs in acute tuberculosis, but not in typhoid fever." Laehr (*Berliner klin. Wochenschr.*, September, 1893) concludes that the practical importance of observations as to the existence of leucocytosis is evident, especially for the differential diagnosis between typhoid fever and pneumonia, meningitis, and perhaps also miliary tuberculosis. Many other writers state that leucocytosis occurs in all acute febrile diseases except typhoid, malaria, and sepsis, and only in these is there a constant diminution. But few of these observers have made any blood-counts in cases of miliary tuberculosis, and it is impossible to discover upon what ground they include this disease in the list of leucocytotic conditions. Rieder does not mention acute tuberculosis; neither does Limbeck. Neudorfer states that leucocytosis occurs in this disease only when accompanied by pneumonia, empyæma, suppurating cavities, or chronic anæmia.

On the other hand, Ewing (*New York Med. Journ.*, December, 1893) found that in acute tuberculosis resembling pneumonia there was no leucocytosis; and he emphasizes this as an important point in the diagnosis between these conditions. Cabot (*Boston Med. and Surg. Journ.*, March, 1894) makes a definite statement in regard to the matter, and says that in establishing the diagnosis between typhoid and tuberculosis the blood does not give us any aid. He was able to find in the literature only four cases of acute tuberculosis in which blood-counts had been made, and in none of these was there any leucocytosis. In one case of his own no increase of the white cells was found. Carter (*Univ. Med. Mag.*, October, 1894) says that infections show leucocytosis, with the exception of measles, typhoid fever, and tuberculosis. Zappert (*Zeitsch. f. klin. Med.*, 1893) records one case in which there was no leucocytosis and an absence of the eosinophiles.

During the past year two cases of acute miliary tuberculosis have come under my observation, and in both of these blood-counts were made for aid in establishing the diagnosis. In neither was there any leucocytosis; but, on the contrary, a constant and marked hypo-leucocytosis was found. Unfortunately, the exact records of the counts in the first

case have been lost, and in my notes I have only general statements in regard to the decrease of the leucocytes; but in the second case, which was studied from the beginning to the end of the disease, systematic counts were made, and the changes in the blood fully studied and noted. The blood-counts were made with the Thoma-Zeiss blood-counter in the usual way, using both the leucocyte-pipette and the one for the red corpuscles. The dilutions were made both with the Toison's solution and with dilute acetic acid. All possible care was taken to make the count as accurate as it could be made; and when any unusual results were obtained they were verified by several counts:

Case I.—Mr. R. K., a student, aged nineteen years, was admitted to the University Hospital on May 5th as a case of typhoid. He had been ill for five days; before that time he had been entirely well. His illness began with with nose-bleed, headache, chill, fever, and vomiting. The fever continued, and the general aspect of the case so closely resembled typhoid that the patient was sent to the hospital with that diagnosis. On admission he had a temperature of 104.5°; there was a marked typhoid condition; the abdomen was distended and tympanitic, and there was tenderness in the right iliac region. There was no eruption. The spleen was enlarged, extending three finger-breadths below the edge of the ribs. The patient had an almost constant cough, with little sputum. Numerous moist râles were heard all over both lungs, but the percussion-tone was everywhere clear. No diazo-reaction could be obtained from the urine. An examination of the blood showed a decrease in the number of the leucocytes. A provisional diagnosis of typhoid fever was made, and the baths were begun at once.

The patient remained in the hospital three weeks. During the first week it became evident that the case was not one of typhoid. Pulmonary signs and symptoms rapidly developed, so that four days after admission there was tympanitic resonance over the lungs, with blowing breathing and increased râles. The expectoration became profuse, and numerous examinations for tubercle-bacilli were made, but these were negative. During this first week many examinations of the blood were made, and at all times a hypo-leucocytosis was found. This was very striking in the stained covers; in ordinarily thick covers but few could be found. It was noted that none of these contained eosinophiles. Many covers of blood were also stained for tubercle-bacilli, with negative results.

Two weeks after admission and nineteen days after the first symptoms of illness elastic tissue and tubercle-bacilli were found in the sputum, and the suspected diagnosis of acute tuberculosis was confirmed. Death occurred after patient's removal home, seven weeks from the beginning of the disease.

Case II.—Mr. H. G., a farmer, was admitted for tuberculosis of the genito-urinary tract. His right testis was removed on December 3, 1894. He bore the operation well, and on the next day his general condition seemed improved; but two days after, his temperature, which had decreased after the operation, rose to 104°, and the patient passed rapidly into a marked typhoid condition of stupor and delirium. The spleen was greatly enlarged, and the diazo-reaction was many times obtained in the urine. Pulmonary signs soon appeared; there was marked tympanitic resonance, with râles and blowing breathing all over the lungs. No tubercle-bacilli were found in the sputum or in the blood, though diligent search was made for them. From the nature of the case there could be no doubt as to the diagnosis of general miliary tuberculosis. Death took place on January 6, 1895. The autopsy showed a typical picture of exquisite general miliary tuberculosis. There were also old suppurating foci in the right lower lobe and in both seminal vesicles. The right one was greatly enlarged, nearly four ounces of pus rich in tubercle-bacilli being obtained from it. The existence of these suppurating foci must be emphasized in connection with the hypo-leucocytosis, which was, as I shall show, constantly present.

Systematic blood-counts were made in this case during its entire progress, and I give the records of some of these in order to show the marked diminution of the leucocytes. These counts were made at least four times daily, on some days during every hour between eight in the morning and six in the afternoon. The count of the leucocytes varied greatly from hour to hour, as may be seen from the record; but from the great care used, and the verification of the results by repeated observations, these variations cannot be considered as the results of faulty technique:

Nov. 24, 11 A.M.	Leucocytes, 8000.
(Operation Dec. 3.)	
Dec. 6, 10 A.M.	Leucocytes, 3500.
" 12, 8 A.M.	" 5000.
" 18, 5 P.M.	" 3500.
" 22, 10 A.M.	" 5625.
" " 11.30 A.M.	" 4725.
" " 3 P.M.	" 5000.
" " 5 P.M.	" 3125.
" 24, 8.30 A.M.	" 3750.
" " 11.30 A.M.	" 3750.
" " 2 P.M.	" 2500.
" " 4.30 P.M.	" 2500.
" 25, 8 A.M.	Hæmoglobin, 80.
" " " "	Red corpuscles, 4,125,000.
" " " "	Leucocytes, 1875.
" 28, 5.30 P.M.	" 3750.
" 29, 10 A.M.	" 1250.
" " 2 P.M.	" 1250.
" " 5 30 P.M.	" 3750.
" 31, 12 M.	" 1250.
" " 6 P.M.	" 2500.
Jan. 2, 11 A.M.	" 1250.
" " 5 P.M.	" 2500.
" 3, 2.30 P.M.	" 600.
	(Hard chill.)
" 5, 8.30 A.M.	Leucocytes, 3750.
" " 11 A.M.	" 3137.
" " 4 P.M.	" 8125.
	(Moribund.)
" 6, 9 A.M.	Leucocytes, 10,000.
" " 10 A.M.	" 5625.
" " 11 A.M.	" 2500.
" " 12 N.	" 5625.
Patient died at 12.50.	

These observations, chosen at varying intervals from the record, may serve to show the hypo-leucocytosis that was constantly present during the whole course of the disease. There was no decided relation between the temperature-curve and the number of leucocytes, though as a rule the highest counts were coincident with the highest temperatures. The very low count, 600, on the third of January, was confirmed by several examinations. At the time of the observation the patient was in a severe chill; his temperature was 104.5°; the surface of the body and the extremities were cold. The blood was very dark, and did not flow freely. A diminution of the leucocytes in the peripheral circulation during a chill has been noticed by other observers. The ante-mortem increase is also well known, having been many times observed.

The microscopical examination of the fresh blood showed many large swollen leucocytes, highly refractive; in several cases the nuclei could be seen slipping out of the cell. Many covers were stained, and differential counts made from these. These counts showed at all times an increase in the polynuclears and a diminution in the lymphocytes; no eosinophiles were ever found. The proportion stood usually thus:

Polynuclear and transitional forms	91.49 per cent.
Lymphocytes	5.22 " "
Large mononuclears	3.09 " "
Myelocytes	.20 " "
Eosinophiles	——

The observations made in these two cases confirm Cabot's statement that the blood does not give us any aid in the diagnosis between typhoid and acute tuberculosis. Whether the hypo-leucocytosis is a marked feature of the latter disease, as it is of typhoid, must be shown by further observations; but the fact that a decided diminution of the leucocytes is present should not in any doubtful diagnosis turn the scale in favor of typhoid fever; for these two cases certainly prove that there may be in acute tuberculosis, even when suppurating foci are present, a hypo-leucocytosis even more marked than that usually seen in typhoid. Therefore, though we are as helpless as before, so far as the differential diagnosis is concerned, these observations may serve in extending our knowledge of the tubercular affection, and save us from drawing conclusions based upon a misconception of its nature.

Further, this great decrease in the sum total of the leucocytes, with relative increase of the polynuclears occurring in a severe and general infection, leads to many interesting speculations. Is there an absolute decrease of the white cells, or is the decrease limited only to the peripheral circulation? Are the cells destroyed, or is the leucocyte-forming power of the body diminished? Do the swollen leucocytes from which the nuclei can be seen escaping mean that the cell is being broken up—that nuclein, or some other antitoxin or germicide, is being set free—that the process is part of the body's antagonism to infection? These questions, so important to us, because of their relation to the treatment of disease, can be answered only by more extended and detailed study of leucocytotic conditions.

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NOTE.—Since the above was written, the second edition of Osler's text-book has appeared. In the chapter on "Acute Tuberculosis" the statement quoted above has been modified to the following: "The blood may show a slight leucocytosis, but in the very acute cases where there are no suppurating foci this is absent."

DOUBLE CASTRATION FOR HYPERTROPHY OF THE PROSTATE, WITH REPORT OF A CASE.[1]

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LECTURER ON PATHOLOGY IN THE GROSS MEDICAL COLLEGE, DENVER, COL.

CASTRATION is an operation as old as mankind; castration for the special purpose of reducing the hypertrophic prostate gland is a surgical success of the last two and one-half years.

Its surgery is a science of facts, and not of theoretical suggestions. The unquestionable honor of having performed the first double castration with the clear and distinct aim mentioned above belongs to the Norwegian surgeon, Ramm. To the Philadelphia surgeon, White, on the other hand, belongs the honor to have been the first to suggest the operation theoretically; but while White was still busy with his experiments on dogs, Ramm had already performed the operation on man.

Haynes, Fremont Smith, White, Finney followed and reported successful cases, and by and by the operation was performed by many surgeons all over.

Wassidlo, early in 1895,[2] published a series of forty-three successful operations, the ages of the patients ranging from sixty to eighty-one years. Before the operation there was great difficulty in emptying the bladder and more or less cystitis. In all of the forty-three cases castration was performed on both sides, and an improvement in the cystitis and micturition always resulted a short time after the operation. In all cases there was shrinking of the enlarged gland.

White, in his last paper, "The Results of Double Castration in Hypertrophy of the Prostate,"[3] re-

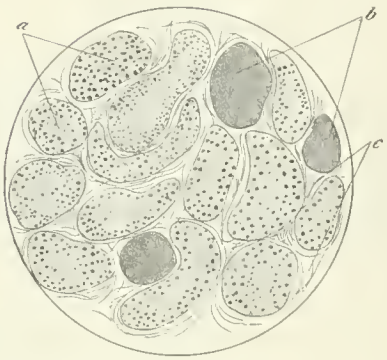
[1] Read before the Medical Society of the City of Denver and the County of Arapahoe.

[2] Centralblätter für die Krankheiten der Harn- und Sexualorgane.

[3] Annals of Surgery, July, 1895.

SEMINIFEROUS TUBULES.

A.

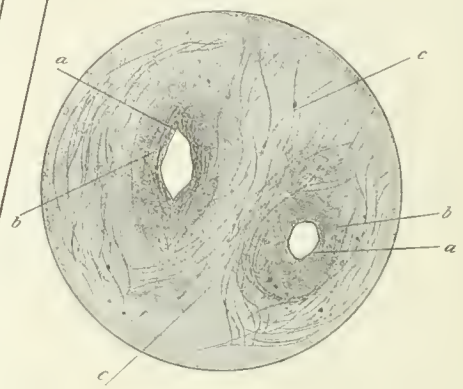


Cross-section. × 120.

a. Immigrated round-cells. *b*. Hyaline masses. *c*. Intertubular connective tissue.

BLOODVESSELS.

B.

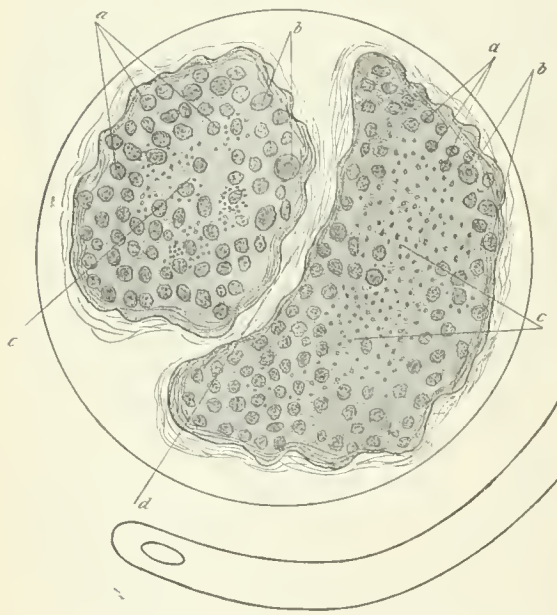


Cross-section. × 120.

a. Intima. *b*. Adventitia. *c*. Fat-tissue.

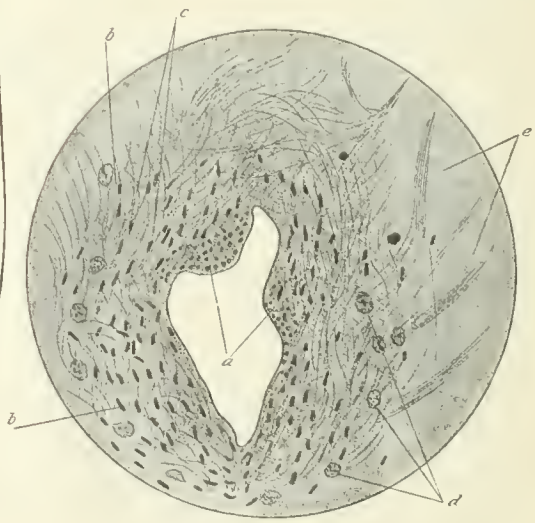
SEMINIFEROUS TUBULES.

C.



BLOODVESSELS.

D.



Andrews' Catheter

Cross-section. × 400.

a. Immigrated granular round-cells. *b*. Immigrated round-cells with nuclei. *c*. Fatty degeneration. *d*. Intertubular connective tissue.

a. Fatty degenerated intima. *b*. Thickened adventitia. *c*. Nuclei of new connective-tissue cells. *d*. Immigrated round-cells. *e*. Fat-tissue.

DR. CARL MEYER, *Fecit*.

ports 111 cases, with a mortality of 18 per cent. (20 deaths); but on 13 of these 20 the operation was performed *in extremis*, or as a last chance, and the remaining 7 died of morbid changes of the kidneys and bladder which would have proved fatal without operation.[1]

The fact that hypertrophy of the prostate gland is in very many cases the direct cause of retention of urine and cystitis, ailments which are among the most troublesome and dangerous diseases of elderly people, has resulted in the proposition of many different operations, but their value cannot be compared with double castration.

The *cystotomia* with drainage and a permanent fistula is not a radical operation because the hypertrophied prostate is not reduced.

The *perineal prostatotomia*, or rather enucleation of the prostate, has only a mortality of about 5 per cent., but is often followed by a painful fistula.

The *suprapubic prostatectomia* is a dangerous operation and also followed by a fistula.

The destroying of a small part of the hypertrophic prostate by the *galvano-caustic methods* from the urethra will reduce only a little of the gland.

Ligation of the whole spermatic cord or of the spermatic artery is sometimes followed by gangrene, and its effect on the prostate is also doubtful.

The *subcutaneous section* of the vas deferens seems to have some reducing influence on the hypertrophic prostate, but it does not act so promptly as double castration, and, besides, it destroys also the physiological functions of the testicle.

Under certain conditions and in cases where we want a prompt and radical result of our activity, in cases, too, where the physiological functions of the testicles do not play any *rôle*, the double castration may be considered as the ideal treatment for hypertrophy of the prostate.

But the operation itself should be limited to severe cases of cystitis with more or less complete retention of urine, to cases not too far gone nor complicated with important morbid changes of the kidneys, as pyelonephritis or uræmic poisoning, otherwise the result will be a bad one, and the operation discredited.

To perform double castration on an emaciated individual in the stage of uræmic poisoning, or in a case complicated with pyelonephritis or other severe morbid changes of the kidneys, is as foolish as to perform tracheotomy in a case of membranous croup of the lower bronchial tubes, or in a case of general diphtheria.

If we are careful in selecting our cases which answer the above-mentioned indications, cases which will not succumb to other morbid changes of the organism a few days after operation, double castration will not have a mortality of 18 per cent., but will be a life-saving operation; but if we perform double castration just because an individual has retention of urine, cystitis, and a hypertrophied prostate, and if we neglect to study carefully the conditions of the other organs, in many cases the patient will die, and the operation will become discredited.

The question arises: Can we explain the effect of castration on the hypertrophied prostate?

White, in the above-mentioned paper, summarizes his opinion as follows:

"The function of the testis, like that of the ovary, is twofold: 1, the reproduction of the species, and, 2, the development and preservation of the sexual characteristics of the individual.

"The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testis and ovary in this respect does not disappear coincidently, and that hypertrophies in closely allied organs like the prostate and uterus are the result of this misdirected energy, etc."

With this opinion White stands not alone. But analogies are not explanation, nor can experiments on young, powerful dogs, full of vitality, be compared with operations upon old men with chronic cystitis, retention of urine, and other morbid changes; and last, but not least, the physiological and anatomical relations between ovary and uterus are of a much more delicate and closely related character than those between testicle and prostate. I cannot believe in a misdirected energy where we have to deal with cystic and fatty degenerated organs in the stage of chronic inflammation (*vide* later).

Other authors claim that the effect is entirely due to some unknown influence from the central nervous system. Again, I cannot believe that the removal of a fatty and cystic degenerated organ which has ceased to fulfil any physiological functions, the removal of which, too, has no influence at all on the body or mind of the individual, can have such an effect on the central nervous system as to produce an *immediate* shrinking of another organ.

I think it must be possible to find the real cause of the fact in some anatomical or, better, pathological change of the respective tissues; and after a careful investigation in my case I believe this cause can be found in "pathological alterations of the circulatory system to some extent already existing before the operation." It is a fact that after every operation on the testicles the scrotum undergoes atrophy; it shrinks to a small lump of connective

[1] White's table shows: 14 deaths from uræmia, 2 from pneumonia, 1 from nephritis, 1 from exhaustion, 1 from heart-failure, 1 from hemiplegia; total, 20.

tissue, fatty tissue, and skin. Not only the scrotum, but the penis too becomes smaller, and also the prostate gland. Very often after castration the patients complain of a cold feeling in the penis, as did my patient.

Now, atrophy is mostly a consequence of incomplete and imperfect nutrition and circulation, either from want of oxygen or from some morbid changes of the bloodvessels.

Through castration a large number of bloodvessels, besides the spermatic artery and nerves of the dartos, are altered in such a way that many of them become obliterated, and thrombosis takes place; and this thrombosis, especially of the veins, may extend to some of the veins of the prostate gland, as there are numerous anastomoses between the venous plexus pudendalis and vesicalis. When the bloodvessels are obliterated not only the smaller veins, but the capillaries and arterioles, as well as the respective tissues, are deprived of the necessary supply of blood and atrophy—fatty degeneration—is the result.

Such obliteration of the bloodvessels may also result from *a direct nervous influence*. We know that the plexus prostaticus of the sympathetic nerve is in close connection with the plexus vesicalis, which also gives branches to the vas deferens. These plexuses contain vasomotor fibres, irritation of which is followed by "narrowing" of the respective vessels. Without doubt the bloodvessels in cases of chronic cystitis and hypertrophied prostate are already in such a morbid condition (mostly fatty degeneration and chronic inflammation of the vessel-walls) as to be "immensely predisposed to the formation of thromboid obliteration."

And from such pathological facts, I believe that the "real cause of the shrinking of the prostate gland after double castration is *impaired nutrition*," as a consequence of obliteration of the bloodvessels caused by a combination of the reasons above mentioned.

Report of a case:

Mr. J., from Denver, aged seventy years, called at my office complaining of a complete retention of the urine for the last two or three days. Patient is a robust man, and claims never to have been sick except for various ailments of the bladder. As a schoolboy patient had been troubled with a urinary disease of an unknown character. He remembers very well that his abdomen became swollen and that during the school-hours he frequently had to go out to urinate. As a soldier he was sometimes unable to serve as a sentinel, because he could not hold his urine for two hours of duty. In this time he had several gonorrhœas and strictures, but no syphilis. Afterward he lived as an innkeeper and farmer; free drinker of beer and wine; is married and the father of healthy children. In the last few years his condition has become worse; urination is more frequent and causes him to rise six or eight times each night. The passage of an ounce or two of urine was always the result of active abdominal compression and frequently attended by defecation.

In the latter part of September the patient, while fishing, stood for several hours up to the hips in cold water, resulting in complete retention of urine.

Examination. Bladder forming a round, pear-shaped tumor, easily recognizable on inspection of the abdomen; top of the bladder reaches the navel; whole region sensitive to touch. The rectal examination shows an immensely enlarged, hard prostate gland the size of a man's fist. Left lobe especially enlarged. The covering mucous membrane is very tight and closely adherent to the gland.

After injection of ½ per cent. cocaine in the urethra (which always may be used before catheterization in difficult cases), I relieved the patient of 5½ pints of urine, of a dark yellowish-color; specific gravity 1024; alkaline reaction; abundant, whitish sediment; traces of albumin. The catheter, before entering the bladder, slipped through a narrow, hard mass, at least one and a half inches in length, at which place patient had a peculiar gnashing and crashing feeling.

The microscopical examination of the urine showed the presence of chronic purulent cystitis, but no symptoms of nephritis.

Therapy. As the retention proved to be complete, and as it was impossible to apply a soft, permanent catheter, the bladder was emptied and washed out every twelve hours. As a few days later it became impossible to introduce either a normal, a prostatic, or a flexible catheter, I got, by the courtesy of Dr. See, a catheter of an old type, which was recommended for such desperate cases long ago by Dr. Andrews, of Chicago. The application of this catheter was astonishingly easy.

As the patient was unable to apply the catheter himself, as the cystitis did not greatly improve, and as about a week after beginning treatment patient had two chills, with a rise of temperature to 100° and some somnolence, I insisted on double castration, which was performed on October 12th in the usual way.

The removed testicles were both degenerated on the surface, small cysts covering the tunica vaginalis propria; these cysts were filled partly with a mucoid and partly with a colloid substance. On the right testicle we found a hydrocele, tunica propria thickened; also tunica albuginea; glandular part of the testis atrophied, of a fatty, white, gross appearance; walls of the vas deferens of the spermatic artery thickened; lumen of the arteries gaping.

Microscopical examination after hardening in alcohol and staining with hæmatoxylin: Interstitial tissue of the gland not hypertrophied; seminiferous tubes partly fatty degenerated, partly filled with immigrated round cells, of a homogeneous or gran-

ular type, some with distinct nuclei; epithelium of the seminiferous tubes not recognizable; no spermatozoa; some seminiferous tubes are obstructed with a homogeneous light mass (hyaline). Chronic parenchymatous inflammation, fatty and hyaline degeneration.

Vas deferens: columnar epithelium absent; lumen of the vas very small; layer of connective tissue much thickened, partly with formation of new connective tissue. The vessels (especially the arteries) of the spermatic cord show no endothelial lining; the whole wall is a very thick layer of connective tissue, with newly formed connective-tissue cells, partly with some immigrated round cells; in a few places we see fatty degeneration in the vessel-wall near the lumen; chronic inflammation of the vessels. (*Vide* drawings.)

The patient recovered nicely from the operation, the wound healing by primary union. The bladder was irrigated twice daily until the twelfth day. On the sixth day there was a voluntary discharge of a half-drachm of urine, and on the following day of several ounces. Further use of the catheter was unnecessary after the twelfth day, when shrinking in the prostate gland was easily recognized. After five weeks this body was one-half to two-thirds its former size, much flattened in shape, and the mucous membrane overlying it freely movable.

Patient declares that never in the last fifty years could he hold his urine as long as he can now (five to six hours). Micturition is of a normal character, with a strong stream. Bladder-wall contracts after emptying.

Urine: Clear, light, acid; specific gravity 1016. Very little sediment, consisting of a few round cells.

This I call an ideal case in every particular, showing clearly and distinctly progressive ailment of about fifty years' duration, which presented an absolute indication for some surgical procedure, not only for the relief from the local disease, but from the threatening uræmic poisoning, which certainly in a few days more would have rendered any operation useless.

No matter what difference of opinion may be entertained by surgeons upon this point, such cases as this indicate forcibly that double castration should be regarded as a standard treatment for hypertrophy of the prostate gland.

As the operation itself, done properly and in time, involves no danger, but in every case is life-saving, it should be performed without hesitation, at least in all cases where the physiological functions of the testicles are nearly or entirely gone.

NEW YORK is being congratulated from every direction on her good fortune in securing the services of Dr. John S. Billings as Chief Librarian of the Consolidated Libraries of the City. Dr. Billings will here find a congenial field for the exercise of his superior powers of organization.

THE PATHOLOGY OF SOME UNUSUAL CONDITIONS IN ACUTE STRANGULATED HERNIA.[1]

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IT is not my intention, in presenting this paper for your consideration, to enter into a discussion of the subject of hernia in general, however important the subject may be from a surgical standpoint; but rather to call attention to some special conditions that I have met with in practice that are not fully considered in any work on surgery with which I am familiar. As the result of this experience, I have been led to draw certain conclusions as to the pathology, diagnosis, and management of these conditions, which I have for some time wished to bring to your attention, that we may thus compare notes to our mutual advantage.

I am sure that there would be but little difference of opinion between us as to the management of a case of strangulated hernia presenting all the cardinal symptoms, as represented by an increase in size of the hernial tumor, pain, irreducibility, and absence of impulse, associated with evidence of shock and vomiting, going through its various degrees up to the stercoraceous. We are seldom at a loss as to what to do in typical cases of any disease. It is the atypical case, the one that in many essential particulars conforms to the rule, but in many others does not, that puzzles the judgment and causes too often a fatal delay in instituting the proper procedures for its relief. It has been my peculiar fortune to meet with several such cases of strangulated hernia; in fact, with such a number that I am inclined to believe these conditions prevail to a larger degree than is commonly thought. In the first place, there are various degrees of strangulation—an essential point to be borne in mind. In its simplest degree it is merely a constriction sufficient to occlude the caliber of the intestine, without marked disturbance of the blood-supply. In its most exaggerated form it is the complete arrest of the circulation in addition. Perhaps in those cases of acute hernia brought on by violent efforts in a person not before subject to a hernia the second condition prevails almost from the beginning. Of cases of acute strangulation of previously existing hernia, I believe the great majority go through all these degrees, if left to themselves.

Before proceeding further I desire to say something of the pathology of strangulation in general.

I think we may set it down as a fact that it is never due to an actual contraction primarily of the neck of the sac or the surrounding tissues—a theory

[1] Read before the Oregon State Medical Society, June, 1895.

that was so long held. There is a *relative* narrowing of the neck of the sac by reason of an *absolute* increase of the contained parts. Let us consider for a moment how this comes about. A man suffering from a reducible rupture undergoes some severe exertion, and finds that the hernia is no longer reducible. A larger amount of the intestine than usual is forced into the neck of the sac, which we may suppose has yielded of its own resiliency, however slightly, and now makes constriction at this point by just this amount of resiliency. The return of venous blood is impeded—not stopped entirely—and a passive congestion of the gut ensues, with swelling. The constriction is increased *pari passu* with this increase in size of the tumor, *relatively* but not *absolutely*, until the caliber of the gut is occluded. The congestion being within the sac, more intestine may be forced through the neck by coughing or bearing down, and thus the hernial tumor may be sometimes indefinitely increased in size; but when the taxis is employed we find we can only reduce this superadded and uncongested portion. As the congested part approaches the neck there is not room to accommodate it, and the contents of the intestines, flatus or gas, are stripped back, thus forming an insuperable obstacle to complete reduction.

This is the explanation I have to offer of those cases in which there is impulse on coughing, with possible increase in size of tumor, and in which from lack of complete obstruction to the blood-supply there is absence of the more severe symptoms of shock and vomiting, etc., in the early stages.

The condition is only remediable by operation, and is a very deceptive one, and too often causes a delay by the absence of the typical signs of strangulation. Its recognition is not a mater of so much importance to the surgeon who would operate early in any case of hernia that could not be reduced; but, unfortunately, this view is not held by many general practitioners, and thus they are deluded into temporizing with hot and cold applications with opium, and repeated trials of the taxis, until the last degree of strangulation is reached, and irretrievable damage has been done.

The general outlines of the following case will illustrate what I have tried to say in regard to these cases of partial strangulation:

I was called to see Mr. P., aged sixty-six years, who had suffered for years from a rupture. Six days previously he had, while at work, suddenly felt his rupture come down, and experienced a severe, sharp pain at the same time. His own efforts at taxis failed, and a physician was called, who arrived several hours afterward, and who also likewise failed at reduction. However, after a few hours the local pain and soreness subsided. There was occasional vomiting, bilious in character, four or five times in the twenty-four hours, until the day upon which I saw him, when it became suspiciously stercoraceous. He was comfortable, but weak. A local examination showed a moderate hernia, which gave distinct impulse on coughing, and which could be increased in size indefinitely by bearing down. Efforts at taxis were followed by easy reduction of the larger part of the mass, but at the internal ring there always remained a perceptible amount that could not be reduced. His medical attendant stated that this had been the history of the case since its beginning. An operation was performed, and the condition described was found. The gut was congested and thickened, but not to such an extent as to endanger its vitality. The patient lived about thirty-six hours, and died of exhaustion incident to inanition and the prolongation of the mild degree of shock. There had been during the whole time no really alarming symptom, except the inability to reduce the tumor completely, and the very gradual progressive exhaustion.

The moral I would have drawn from this case is this: *No matter how mild the constitutional symptoms, no matter how nearly the rupture may be reduced, if it cannot be entirely reduced, do not wait more than a few hours before resorting to operation.*

The other and more important class of cases to which I wish to call your attention is represented by the so-called "reduction en masse," or "en block," or the "properitoneal hernia" of Krönlein," and I wish to introduce what I have to say on this subject by giving an outline of two cases that I have met with:

Case I.—A steamboat-man, about thirty years of age, had suffered for years from a rupture, for which he had worn a truss. While trucking upon the boat his hernia came down, and was reduced by a physician and the truss reapplied. After a day or two's rest in hospital he again went to work, but complained that things did not feel right at the site of the hernia. An examination failed to show the presence of the hernia. The rings were very much enlarged, and lay directly over one another, as in old herniæ, thus leaving a direct opening into the abdomen. The finger could be passed into the abdominal cavity to its full length, and twisted around without difficulty. He presented some symptoms of strangulation, however, in the way of vomiting, etc., and was sent to the hospital, and came under the care of Dr. G. B. Young, formerly U. S. M. Surgeon at this station. By the following day his general symptoms were all worse, and Dr. Young asked me to see him again. The local condition was the same as the day before. *Percussion* over the ring gave distinct dulness, which at the time was difficult to account for, but it suggested that something was wrong at this point, and this, together with his general symptoms, caused us to operate and ascertain the condition. The sac was found entirely within the abdominal cavity, the neck—the point of constriction—having been sepa-

rated from its attachments at the ring, lying fully four inches away from the abdominal wall. (*Vide* Fig. 1.) An amount of intestine represented approximately by the size of the fist was strangulated, and very much congested and thickened. The neck of the sac was pulled up and cut. The blood-supply soon re-established itself, and the intestine was returned. The patient made a good recovery.

CASE II.—A man, about fifty-years years old, had suffered for years from hernia. He had worn a truss which had kept it in place. Six days before I saw him his hernia had come down and had been reduced, but he complained of pain within the abdomen on the same side. The canal was patulous, and the finger could be pressed up to and within the internal ring, meeting at this point with an elastic tumor. General condition was extremely bad; there was profound prostration of the nervous system, stercoraceous vomiting, etc. Percussion showed dulness over the internal ring, which extended toward the median line, well behind the rectus muscle. Diagnosis was made of strangulation within the abdomen, and although well-nigh hopeless an operation was advised and done. A free incision was made with the upper limit well above the internal ring, and all the structures cut down to this point. The various components of the cord were recognized, but I confess to have been sorely puzzled at the entire absence of anything that looked like a hernial sac. The internal ring was enlarged, and just within presented this elastic cyst-like tumor. I determined to find out just what condition of things was present, and very carefully cut into this tumor, which proved to be the intensely distended hernial sac. There was an immediate escape of a large amount of bloody, foul-smelling serum, and a mass of intestine of the size of the double-fist, black and gangrenous, presented. The neck of the sac was found to lie well behind the rectus muscle, and nearly in the median line. (*Vide* Fig. 2.) It could now be lifted up and brought forward, which was done, and the constriction cut. Some ten inches of the sphacelated gut was removed, and on account of the condition of the patient the two ends were stitched to the external wound, and the operation hurriedly completed.

The progressive sepsis that was present at the time and profound prostration continued, and the patient died in about thirty-six hours.

An earlier recognition of the condition would undoubtedly have been successful as in the other case.

The only difference between the two cases consisted of the greater amount of serum in the latter case, the sac being distended by it to its full capacity.

Pathology: The two cases present the following peculiarities: In both cases the sac was entirely within the abdomen, the neck being removed from the internal ring by several inches. The question arises, How is such a condition brought about? These cases were both cases of long standing, and both had worn trusses for years. It seems to me that in this fact lies the solution of the problem. The element of time, combined with the pressure of the truss, supplies the essential conditions. Upon the first appearance of the rupture, and while the sac is small, the truss is applied. This keeps the hernial mass within the abdominal cavity. Let us suppose a certain degree of laxity of attachment of the neck of the sac to the internal ring. A small amount of intestine may then find its way into the sac, but is prevented from coming down by the presence of the truss. The pressure thus exerted presses the neck back from its attachment to the ring, and thus as it recedes the hernial sac increases in size and comes to lie entirely within the abdominal cavity. The conditions determining strangulation are, of course, the same as in any other case of rupture, except that the constricting tissues are solely the puckered folds of thickened peritoneum at the neck of the sac.

FIG. 1.

FIG. 2.

FIG. 3.

I wish to emphasize the importance of *percussion* in recognizing this condition, as it is the point of most importance, and one which I have never seen referred to in this connection. It has been resorted to to determine the contents of a hernial mass exter-

nally, but not to determine the presence of *internal strangulation.* If percussion over the internal ring gives dulness or flatness, it indicates the presence of something abnormal—in this case the presence of congested intestine with more or less serum in the sac—and if associated with other symptoms of strangulation indicates the site of the trouble. Again, it should be of value after reduction as indicating whether the reduction is complete or merely the return of the sac with its contents into the abdominal cavity.

It seems to me that these two cases strongly indicate that all cases of reduction en masse are simply the return of the intestine into a preformed sac, which, under ordinary circumstances and under the pressure of the truss, normally lies within the abdominal cavity. I cannot believe that taxis ever strips up the neck of a sac primarily as our textbooks would have us believe.

The accompanying diagrams may help to elucidate what I have attempted to explain in regard to the above conditions.

THE PREVENTION OF SOCIAL DEFECTIVES.[1]

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THE purpose of the present paper is to set forth forcibly how much better and easier it would be to apply prevention to the problem of our defective classes than to let things go as they please, and then try to patch up the results; to try to prevent the existence of defectives, than to cure their defectiveness. Of a given population of one million souls in almost any of our fair States, including idiots, imbeciles, epileptics, insane, deaf-mutes, and certain of reform-school children, there may be fairly estimated to be about six thousand so definitely defective that the defectiveness is clearly apparent to all about them. This is about one person in every one hundred and seventy. I have made a roughly approximate estimate, formed from the opinions of others, variously secured. Estimating in this way, we can make out a table about as follows:

Most appropriately called defectives—

1. Idiots, imbeciles, and feeble-minded	1.50 to 1000
2. Deaf-mutes	.67 to 1000
3. Insane	2.00 to 1000
4. Epileptics	1.50 to 1000
5. Perverts and defectives of reform-school type	

More loosely called defectives—

6. Blind	.97 to 1000
7. Deformed or paralyzed	
	6.64 to 10000

Sometimes included as defectives—

8. Paupers (in almshouses or quite fully supported)	1.32 to 1000
9. Tramps	.75 to 1000
10. Inebriates, extreme	1.00 to 1000
11. Criminal classes (in prisons)	1.16 to 1000
	10.87 to 1000

To this may be added, as largely dependent rather than defective—

12. The helpless aged	50.00 to 1000
13. Children under twenty years of age	450.00 to 1000
14. Physically sick at any time	40.00 to 1000
15. All others doing nothing, wholly dependent.	

The "defectives" are, of course, only a small portion of that larger class called "dependents," which must include at any one time all physically sick, all young children, as well as all the healthy people who, for one reason or other, are relaxed into complete dependence. Broadly speaking, each productive working-person has to support not only himself, but one other person in a state of dependence. So ground into our system of living is this subject of dependence that we never think of rebelling at the need of supporting the criminals, the defectives, and our dependent relatives. Immense as the question is financially, we must here drop the consideration of it with this reference.

But the mental defects and the mentally defective ones, though not all dependent by any means, are a blot on our humanity—a reflection on our mental integrity as a race and our good judgment as a generation. They not only carry the most bitter regrets possible into many a family, but they reach out in their reflections and insinuations till we all shrink lest we be tainted with a like curse.

What are the causes of all this defectiveness? and, more especially, What can we do about it? are questions, the central elements of which have been largely suppressed in public considerations, but which we think ought to be fully discussed. Idiocy, imbecility, feeble-mindedness, perversions, and epilepsies undoubtedly do *not* exist without causes, but these causes are unfortunately in their histories obscured. It is here that we begin to touch on that subject, "heredity"—a subject which so touches the bare nerves of each one of us that we feel like shrinking; and, indeed, most people do shrink and avoid its consideration, and yet, because so vital, it is most useful to study. It *does* make some difference to the child what kind of man and woman his parents are; nay, more, this makes more of difference than any other cause one may mention. Heredity is not a freakish and occasional thing, showing itself only by peculiarities of feature or of conduct, but it is a *steady and constant element* that gives a trend to the whole of

[1] Presented before the Minnesota State Conference of Corrections and Charities, at Faribault, Minn., October 30, 1895.

a man's constitution. That one should not inherit is the exceptional and strange thing. All that we start out with is inherited, not merely some striking peculiarity. Some form is inserted into the elements of our bodily structure, by which they not only start out poorly or well, but by which, moreover, they are influenced throughout life; by which, even late in life, they fall before insanity, or consumption, or other elements. Moreover, heredity must be considered not by following insanity alone, nor epilepsy alone, nor imbecility alone, but by all those and the many others which depend on nerve- and brain-structure, each of which may be handed down changed to any other.

So many defectives are there that the subject reflects upon many of us in an unpleasant way, and we will likely try to thrust it back; but to do this is but to invite their continuance. To clean up the record for future generations we must *study*, not ignore, this cause; nay, we must even face *our own peculiarities*. Logically, if inheritance is a cause of defectiveness, we should study the subject with all its relations, both personal and general. Taking, first, the grosser forms of insanity, imbecility, and early epilepsy, defectiveness in one or both parents is undoubtedly a most important cause. Sometimes this defect is evident to everyone; often it lies back as an insanity or as a yet undeveloped liability to insanity; often, moreover, it lies as some partially developed defectiveness in one parent fully developed in a child, still as a true heredity. At times some debilitating physical disease invades the nervous system of the parent, like consumption, alcoholism, or syphilis, and the offspring are neurotic, epileptic, or eccentric in some way. In the subject of insanity I am often pointed to our statistics showing only about 25 per cent. as inherited, and am asked why statistics do not more fully uphold my statements. The reasons are as above. Many parents die before insanity develops. If a man is only half insane—that is, defective in a medium or mild degree—and his son is insane, going to an asylum, the case is rarely reported as an inheritance. On the other hand, if the man is insane and the son only defective in a moderately feeble or erratic way, it is also rarely reported. If a man is syphilitic or grossly inebriate, and a son is insane, it is not counted. If a son is insane through any more temporary parental cause, it is not reported; and, again, in many cases well-known facts are suppressed or misrepresented by the parents, sometimes through ignorance, sometimes because of the stigma thereby attached. Finally the histories of our patients are comparatively unknown; rarely can we personally judge of the parents.

Right here we will be asked what defectiveness includes, any way; and we would say, as simply and untechnically as we can, that *it is the lack of the full development of one or more of the faculties, usually mental, sometimes physical, or the irregular, imperfect, or unbalanced development of them.* We in this discussion include insanity as well as imbecility. At once, too, as a flash will follow in the logical mind the question, Are we any of us *perfectly* balanced or perfectly developed in all our faculties?—a question that is fundamental, and one which the psychologist must face even if the untrained popular observer is content to slight as too technical and quibbling a point. By scriptural warning, and all popular thought, we have been so many times told that "no one is perfect" that the practical application would seem to follow, almost inevitably. That men are of "all degrees of ability" is commonly said; that children are of all "degrees of brightness" is also a common expression; but that men are of differing degrees of "debility," or at times of *insanity*, and that children are of differing degrees of *feeble-mindedness*, can rarely be found in the written language. Does not one involve the other to a certain degree, even as mountains involve the existence of valleys? "Abilities" are not commonly due so much to differences in application as to differences in native ability.

It is, however, the cases in which these disabilities become *gross* that we are considering, and those only. We do not wish to confuse the line between disability and disease unnecessarily, nor more than the facts will permit. They mingle a good deal, whether we admit it or not, and more so in mental than in physical lines. We feel little sympathy for the Nordau type of criticism, yet recognize the above fact as giving it a partial foundation.

Next we ask ourselves, Can these forms of defectiveness (meaning now the grosser defectiveness) be induced by some cause acting after birth? Mental as well as physical impairment certainly can be induced by head-injuries and severe diseases, but such defects are usually of rather different type. Moreover, ordinary causes rarely can produce feebleness of mind, except a predisposition exist; in which case the predisposition is essentially the cause, and *predisposition* is usually a true heredity, as yet undeveloped. Among such causes we may name prominently fractures of the skull, sunstroke, typhoid fever, and scarlet fever.

In general, then, we would find the most common cause of defectiveness to be an inherited constitution; which may be in the one case an eminently defective one, in the other case one easily liable to defectiveness or which tends toward it later in life. It will, perhaps, disappoint some if I do not dilate upon inebriety, dissipation, sexual vices, and our so-called fast living of modern life, as causes of

defectiveness, and, perhaps, also upon such causes as severe diseases, changes of the climate, etc. But the final point is that even these seem to need the inheritance of a susceptible organization in order to be effective. For example, of twenty-five men who drink equally under equal conditions, at a rough estimate, only about one shows mental failure. Is it not the different inherited constitution that determines this? I think you will find it so. And so you will find it throughout the list. Even the criminal classes are, by some popular literature, held to tend toward criminality by reason of direct or indirect inheritance.

The subject of prevention then seeks for causes, and the causes point us toward, first, one's inheritance; secondly, that right living which seeks to prevent the fruition of that inheritance.

Under the first section, we would say that we consider that the time is ripe for such legal measures as one which will *prevent the marriage of an epileptic, or of one who has suffered from an attack of insanity.* Perhaps this is as far as I should venture at the present time, lest the timid ones overwhelm the whole motion with their objections. I do not doubt, however, that in some future time laws will go much further than this, for it is very doubtful if persons with pronounced tuberculosis of the lungs should marry. Children of the insane are occasionally in a painfully doubtful position. Many other thoughts suggest themselves.

I do not attempt further argument for such a law than is contained in the preceding statements. If the children of an epileptic were *always* epileptic or grossly defective, doubtless I would have few objectors. Likewise, if the children of the insane were *always* insane or otherwise defective. But we think that the claim that a certain proportion, say 25 or 50 per cent., will show defectiveness is argument enough. Especially as to the alienist minor defective strains are noticed in others of the family. I have purposely made the above statements rather bluntly. You are left to consider, first, if such statements are true; secondly, if being true, should not such laws as are above mentioned be enacted?

The first part of our prevention, then, is that we have laws to prevent the transmission of the more gross defectiveness. The second part of the preventive measures leads us toward an *education* of people which shall induce them voluntarily to avoid marriage or offspring because of consumption, insanity, inebriety, etc. However, if persons are grossly defective mentally, such education will not be of value to them, their minds being too defective to be so controlled. In many cases, however, it will do good.

The main educating element, however, is toward bringing the *people, as a whole*, up to the point of sustaining and approving all measures for good mental health, hygiene, and prevention. To the medical mind the ignorance is stupendous as yet. One need not cite the suicidal action of alcoholics to confirm this, nor the frequent upholding of gross defectives as being sound in mind, so often noted in work among the insane. This paper itself, indeed, is but an attempt toward educating people to sustain firm measures, because bringing to them a clearer insight of bad effects.

To avoid leaving this as a mere theoretical treatment of the subject, let me consider a few facts. Many people will say of a defective, "he got this from his father or mother," but will not think to take the next fairly logical step—"his father or mother ought not to have married." Among domestic animals no such degeneration of stock is allowed. How many of us will realize how forcibly these things press upon us? How few of us realize that in the last ten years about five thousand people were discharged from the insane hospitals of this State alone, about two thousand of whom were already married, and most of the rest free and of age to marry. Probably during the ten years the institution-insane alone have become parents of five thousand children, 25 to 50 per cent. of whom will probably before death show some defectiveness. This is but one item. They were parents of about an equal number before becoming insane. There are also the insane who have never been committed to an institution, probably numbering one thousand in this State at any one time. There are the imbeciles and epileptics of marriageable age, living outside of institutions, numbering many hundreds, and probably another thousand. And what shall we say of such of the graduates of reform-schools as are perverts, of those having gross nervous diseases, of those in the later stages of consumption, of the grossly inebriate, as well as the ill-cared-for children of paupers, of prostitutes, and the many illegitimate births, with their uncertain and often impaired inheritance. The census of 1880 claimed about one in every one hundred people of all ages as among the defective, delinquent, and pauper classes. This would make a proportion among the adult persons of about one in every seventy-five, and even then would include only the grossest cases. Is not here the largest known field for effort?

Under the second subdivision of the subject, that of education, comes subordinately the hygienic education of children and of adults who are predisposed. We cannot give much of detail. It embraces, indeed, all ways of living. A few leading ideas may be mentioned.

1. Early book-education should not be forced; let the child grow up and absorb its education by contact. It is stability of character and ability to do that the child needs, not the hot-house growth of memorized data.

2. Repress the too often excitable or emotional disposition toward a quiet, steady control of self. Do not encourage any one to be a prodigy. Extreme brightness in some one way may mean an unbalance. It is not the enduring element.

3. A country life and an outdoor life for a child tend usually in the right direction. All seclusion and sedentary habits are to be avoided.

4. Educate the child freely, rationally, and plainly against the evils of dissipation, of alcoholism, and of all excesses. Alcoholism especially has a distinct tendency toward both physical and mental impairment. Of course, the parent is the natural educator of the child, and in proportion as the parent is unbalanced, erratic, unstable, hysterical, alcoholic, or of other mental defect, the tendency will be to perpetuate carelessly the defectiveness. To quote from J. Madison Taylor concerning imbeciles, "In a large proportion of cases the parents are themselves mentally incompetent. They are certainly rarely fit to grasp rightly the spirit of the inquiries." This is only to be met finally by the general culture of an enlightened public opinion, as before outlined.

5. Beside such causes as above considered, causes such as malnutrition, blood-changes, fevers, toxic elements, and ways of living are more vaguely acting causes calling for medical study and an education in physiology or physical life, as well as in the more and mental influences above.

Summarizing, then, we find that to those to whom most peculiarly belongs the name defective we have:

1. A gross form of mental feebleness can be produced by head-injuries or in later life by brain-changes like those of hemorrhage or abscess of the brain, and in senile life atheroma, atrophy, and general senile recession.

2. In very early life such causes as severe typhoid or scarlet fever can in a few cases produce permanent feebleness of mind, however, acting upon a predisposition.

3. Under heredity we may have (*a*) one or both parents insane, imbecile, epileptic, paralytic, eccentric, hysteric, choreic, or with other nervous or mental defects, or (*b*) one parent may be syphilitic, consumptive, alcoholic, or Brightic, and the nervous system thus impaired will show an impaired nervous system in the children of varying type, or developing into defects the form of which seems largely a matter of seeming chance.

Under headings one and two our preventive ideas do not very thoroughly apply, but these do not make up a very high per cent. of our total cases. The third class is that to which we may apply our effective study. We advocate, first, legal measures controlling or preventing the marriage of the grossly defective ones; secondly, hygienic and general education which shall hinder the development of the predisposed traits and help people to avoid the effects; and, thirdly, the education of the popular masses to sustain and support preventive measures as advocated.

In conclusion, concerning legal measures, just a note. It has been said that all men are "free and equal," but the fallacy of this is now quite well known. We are not free to do that which will interfere with other's freedom or well-being, and the marriage of epileptics certainly does just this to the offspring. I feel that by such measures we strike at the root of the evils, while by nursing and liberating the defectives we merely try to bend and direct and make healthy the branches and often perpetuate the defectiveness. I cannot think that by multiplying words or by rhetorical effects I can add to these plain statements, which I hope are honestly, if too bluntly, stated. I therefore leave the subject with you.

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CLINICAL MEMORANDA.

BELLADONNA-POISONING WITHOUT DILATATION OF THE PUPILS, CAUSED BY A BELLADONNA-PLASTER.[1]

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I ONCE ran across the following case of belladonna-poisoning, which had not the usual prominent symptom of dilatation of the pupils, and this peculiarity, together with some other circumstances of the case, put me so on the ragged edge of doubt for a few hours that the lively impression of the incident will probably never leave me.

On April 2, 1891, about 10 o'clock in the evening, I was called to see a patient who had consulted me several times before on account of rheumatic pains, cramps, and various minor ailments.

He was a large, fleshy man, aged sixty-seven years,

[1] Read before the San Francisco County Medical Society, December 10, 1895.

a good eater and drinker, very well preserved, and had a distinct murmur with the first sound of the heart, heard loudest at the apex. Sometimes he had dizziness while walking on the street, and occasionally pain and numbness in the fourth and little fingers of the left hand, a symptom that is not infrequently associated with valvular disease. In no other respect, however, did he seem to suffer from his cardiac trouble, for the equilibrium of the blood-current seemed always well maintained, and if there was any hypertrophy it must have been trifling.

As I said before, I was called in to see him on this particular evening, and I found him with a flushed face and his tongue so hard and dry that it felt as it sometimes does in extreme cases of diabetes. There were constant attempts to swallow, and he had a quickened and rather stormy pulse and increased respirations. His speech was rather thick on account of the dryness of the tongue and mouth, and he was a little "rattled" in his ideas, but rational enough to give an account of himself. He said he had felt this coming on just before dinner, and he attributed it to some whiskey and quinine which he had taken at a bar during the afternoon. It happened that just at that time this way of taking whiskey was the fashionable "tonic" in the down-town drinking-resorts, and was drunk by a large number of people who wished to be in that particular "swim." I knew of and had seen the erythema sometimes caused by quinine, and also knew that whiskey thickened the tongue and jangled the ideas out of tune, but neither of these drugs nor their combination seemed to fit the symptoms in the present case. Atropine- or belladonna-poisoning ran through my mind, but this idea was dismissed because the pupils were not dilated, and they did not dilate during the entire trouble. Furthermore the whiskey and quinine were taken at a bar, not in a drug-store, so that there was little chance of a mistake in dispensing, and he said he had not taken any other drug during the afternoon, and of this fact he was positive.

Although he had every appearance of having a very high fever, yet his temperature was normal; but then febrile affections do occur without a thermal rise. I went over his chest carefully to exclude pneumonia, nor could I find anything else to account for his condition. All this was not very satisfactory, but the facts as I saw them were: A man puffing away at a fairly high rate, with a stormy, accelerated pulse, a dry, hard, furred tongue, a dry, reddened, but not hot skin, a flushed face, constant efforts to swallow, no rise of temperature, and no dilatation of the pupils.

Having determined to await further developments, I left him, promising to be back early the next day.

I was called again at 2 o'clock in the morning, those who were watching him becoming very much alarmed. He was now frankly delirious, although the delirium was not of a dangerous character. He was very restless, picking at the bed-clothes, constantly attempting to get out of bed, and mumbling incoherently and rapidly about a gold-mine in which he was interested. He had evidently grown a great deal worse during the few hours I had been absent. He was not suffering from diabetes, for there was no sugar in his urine, and there had been none in any of the examinations that had previously been made of it. Nor had I ever found any albumin. He used to pass only from a quart to forty ounces of urine a day, excluding that passed at stool, but he always perspired very freely, which would account for the somewhat diminished quantity. Bright's disease without albuminuria does occur, and the heart-lesion, the diminished quantity of urine, and the patient's habits made me watchful in this regard. There was no urinous odor on his breath, however, and the general symptoms did not tally with those of a case of uræmic delirium.

While sitting on a chair watching the patient and thinking what in the world could be the matter with him, it suddenly occurred to me that I had told him to put a belladonna-plaster over one of the numerous pains and aches he used to complain of. I almost automatically walked across the room and felt under his shirt, finding an immense belladonna plaster twenty inches long and six inches broad over the left side of the chest. This was quickly pulled off, the skin well washed, and a hypodermic of morphine given.

He soon recovered and was able to go about his ordinary business in a few days.

He gave the following account of how it all happened: He had worn smaller pieces of belladonna-plaster over the left side of the chest for quite a long time, and had frequently suffered from dizziness and a dry, uncomfortable feeling in the throat. The dizziness was supposed to be owing to functional derangement of the liver, and the dryness in the throat to a pharyngitis. The afternoon of the evening on which he was taken ill he went to a drug-store and asked for a good, big piece of plaster. They said they had some in just fresh, and they cut off as large a piece as he wanted. Having secured the plaster he went to the baths and took a piping-hot soak, and applied the plaster to the actively perspiring, freshly washed skin. Before dinner his mouth was already disagreeably dry and his throat constricted, but he did not heed it much. The other symptoms followed as they are related.

Belladonna, or its alkaloid atropia, is used so much in medicine, and the drug acts so energetically on human beings, that cases of poisoning by it cannot be said to be rare. Poisoning by the application of a plaster is, however, undoubtedly not a frequent occurrence, but its possibility ought to be borne in mind.[1] This case was peculiar in that there was no dilatation of the pupils, an event so rare that its absence would justify entirely overlooking the fact that it was a case of

[1] Pye-Smith mentions a case of belladonna-poisoning under the care of Mr. Hilton, "caused by the application of a large belladonna-plaster in a woman, who must, one supposes, have been more than commonly susceptible." (Diseases of the Skin, by Pye-Smith, p. 180.)

In one case 100 milligrammes (about 1½ grains) of atropine caused death by being absorbed through a vesicated surface. (Lehrbuch d. Intoxikationen, von Dr. Rudolf Kobert, Seite 606.)

Crocker mentions the case of a man who wore a belladonna-plaster for a week and then took two seven-drop doses of the tincture, causing his hands and feet to become swollen, red, and tense. (Diseases of the Skin, by H. Radcliffe Crocker, M.D., p. 327.)

Ernest F. Maddox has also reported a case of poisoning by a belladonna-plaster (Amer. Journ. Med. Sciences, vol. cvi. p. 572). The pupils were no more dilated than is frequently the case in myopia.

belladonna-poisoning at all.[1] But if the dilatation of the pupils had been present, and the fact of its being belladonna-poisoning forced on one, so to speak, even then one might not think of the possibility of its being caused by a belladonna-plaster.

If I had then known of that very simple way of demonstrating belladonna-poisoning by dropping some of the patient's urine in the eye of the family cat, the patient might have been saved a risk and I a great deal of worry.[2]

REPORT OF "A CASE OF EPITHELIAL CANCER OF THE NOSE OF THREE YEARS' STANDING;" ITS TREATMENT AND CURE.[3]

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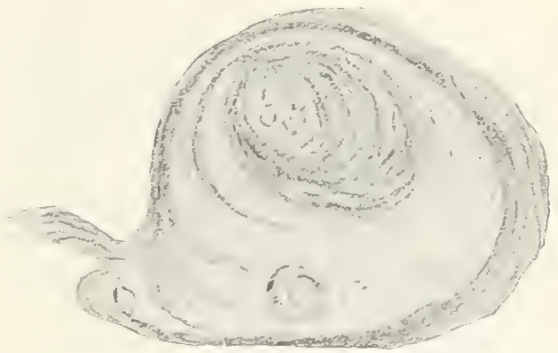
SEPTEMBER 14, 1894, Mrs. H., seventy-five years of age, was sent by Drs. Quin and Bergess, of this city, as a case of epithelioma, which, on examining carefully, I confirmed. The characteristic "concentric globes or epithelial nests" presenting in microscopic section, I at once proceeded to clean the ulcerated and broken-down surface carefully and thoroughly, and though advising curettage, it was decidedly objected to by the patient. The seat of the disease was on the right nasal ala near the junction of the cartilage with the right bone of the nose, and extending in its course to within one-fourth of an inch of the internal canthus of the right eye. As destructive action had advanced under the scab which covered it I proceeded to use trichloracetic acid, being particular to cauterize thoroughly every portion of the cancerous mass, first using a 10 per cent. solution of cocaine to relieve the pain. I then gave my patient a solution of zinc chloride, ten grains to the ounce, with directions to keep the surface wet with the same and to see me the following day. The disease was of three years' standing, the woman emaciated, poorly nourished, and full of "Irish obstinacy," so much so that she would not take any internal medicines, and other doctors had prescribed ointments, etc., galore—of course, unavailingly.

This case at the sixth visit began to show slight improvement. The slough from the acid was removed and effort made to induce granulation. For months it was "up and down," and when after healing two-thirds of the sore pearly nodules would appear in the upper portion and have to be destroyed, necessitating more patience and care. I continued my treatment of the case, varying the dressings but slightly and depending *entirely* upon the zinc-lotion and the acid cauterization. My work has been rewarded with success. There has been perfect healing, and with the exception of a slight depression the skin is unbroken. The original size of the cancer was one inch by three-fourths of an inch, and she had been discouraged by everybody.



As I took the case (a charity one, by the way) for the purpose of experimentation, I feel positive that if this treatment is followed under similar conditions success will be assured. Of course, the administration of arsenic in these cases I should consider beneficial; but, as heretofore stated, "my old woman" would have none of it.

The trichloracetic acid I consider the best local caustic, and in this case unquestionably was the curative agent.

I present this case for your consideration.

226 GENESEE ST., UTICA, N. Y

[1] It must not be forgotten that this was a case of chronic poisoning, for the patient had worn belladonna-plasters, although not such large ones, for a very long time, and Sabatini (quoted by Kobert) draws attention to the fact that the drug, after a time, ceases to act on the salivary glands, the heart, the intestine, and last of all on the pupil. (Lehrbuch d. Intoxikationen, von Rudolf Kobert, Seite 610.)

Dr. L. Lewin draws attention to the fact that there can be belladonna-poisoning with only moderately dilated pupils. (Nebenwirkungen d. Arzneimittel, p. 221.)

[2] Mentioned by Prof. H. C. Wood in his lecture on belladonna. (The Boston Medical and Surgical Journal, July 13, 1893.)

[3] Patient presented before Oneida County Medical Society quarterly meeting, July, 1895.

MEDICAL PROGRESS.

Infection through Books —At a recent meeting of the Société de Biologie, DU CAZAL and CATOIN (*Münchener medicin. Wochenschrift*, 1896, No. 1, p. 22) detailed the results of an investigation to determine whether books were capable of transmitting contagious diseases. The streptococcus, the pneumococcus, the diphtheria-bacilli, the tubercle-bacillus, and the typhoid-bacillus were thus studied. Animals inoculated with cultures prepared from books contaminated with the products of the various conditions in which the organisms named were found developed the given affection. It is thus necessary to practise disinfection of books that have been used or in any way contaminated by persons suffering with infectious diseases.

An Analysis of Eighty Cases of Lithotrity.—At the recent French Congress of Surgery, ALBARRAN (*Ann. d. Malad. d. Org. Gén.-Urin.*, 1895, No. 12, p. 1079) presented a statistical analysis of 80 cases of lithotrity. Seventy-six were in males, 4 in females (1 in a girl of ten years). Of the calculi, 46 were phosphatic, 29 uric acid, 4 urophosphatic, and 1 oxalic. Of the patients, 20 were older than seventy years, and 7 had reached or passed seventy-eight years. The oldest was eighty-four years, and presented aortic insufficiency; the operation was performed without anæsthesia, and the calculus removed weighed 400 grains. The largest stone crushed measured 2.5 inches in its longest diameter, and weighed 2.5 ounces. In two-thirds of the cases the bladder was

infected, and in many the prostate was enlarged; in several pyonephritis existed. In 8 cases the operation was performed without anæsthesia, sometimes because of facility of performance and small size of the stone, and at other times because of contraindications to anæsthesia. Recovery ensued in all cases but one, in which death resulted from anæmia.

The Renal Changes of Diphtheria.—REICHE (*Centralbl. für innere Medicin*, 1895, No. 50, p. 1209) reports the results of a study of the kidneys in 85 fatal cases of diphtheria observed prior to the antitoxin-period. Thirty-eight of the cases had been in males and 47 in females. Fifty-two were under five years of age, 23 between six and ten years. In 22 death took place between the 2d and 5th days, in 36 between the 6th and 10th days, in 27 between the 11th and 24th days. Tracheotomy had been performed in 58. Forty-seven presented lobular pneumonia of varying extent. In many cases the trachea and bronchi were involved in the diphtheritic process; in 14 the gastric mucous membrane, in 8 portions of the œsophagus, and in 1 a portion of the ileum.

The kidneys presented no constant or characteristic naked-eye appearance. Microscopically, changes in parenchyma, interstitial tissue, and Malpighian bodies were visible. Those in the parenchyma were the most pronounced and assumed two main types. In all there was cloudy swelling of the epithelium and later fatty degeneration. A smaller number of cases presented coagulation-necrosis. In 44 cases inflammatory proliferation of the interstitial connective tissue was found. In all instances the changes were most pronounced in the cortex. The Malpighian bodies constantly presented alterations, though of varying degree. All of these changes are attributed to the action of the toxins generated at the seat of the diphtheritic process, and thence absorbed into the circulation. The liver was affected in a similar way, but in a much smaller number of cases and in slighter degree; the pancreas only exceptionally. No relation, however, could be established between the character and extent of the diphtheritic process and the secondary changes in the abdominal viscera.

Pseudo-bulbar Paralysis in a Child Three Years Old.—At a recent meeting of the Society of Pediatrists of Moscow, KYSSELE (*Presse Médicale*, 1896, No. 3) reported the case of a girl apparently normal at birth except for pronounced flexion of the fingers and toes. It was at once observed, however, that the infant suckled with difficulty, and later that it failed to protrude its tongue. At the age of about a year, following an acute illness lasting three months and diagnosticated as typhoid fever, the child presented a condition of weakness, with difficulty in deglutition. It had never spoken. On examination, at the age of three years, the child protruded its tongue with difficulty. There was copious salivation and a disagreeable odor exhaled from the mouth. The bony skeleton and the musculature were well enough developed. There was no evidence of rhachitis, although the state of the nutrition was below par. The mucous membranes presented a normal tint. The gums were swollen and hyperæmic, and bled readily. No lesion of the viscera could be discovered. The sternum was deeply depressed with each inspiration. Hearing and vision were normal. There existed simple nonatrophic paralysis of the muscles supplied by the two inferior branches of the facial nerves, involving especially the orbicularis oris; those supplied by the upper branches were normal. The hypoglossus was paretic on both sides. Respiration was free, but phonation was impaired. The extremities were rigid, but the electric reactions were preserved. The cutaneous reflexes were generally increased, and the tendinous reflexes also, especially in the lower extremities. The feet occupied a position of equinovarus. The little one could stand erect if supported, but it was unable to walk. Urine was passed incontinently.

Successful Total Extirpation of a Gravid and Myomatous Uterus.—CAMERON (*British Medical Journal*, No. 1823, p. 1414) has reported the case of a woman, thirty-six years old, in the fifth month of her first pregnancy, whose abdomen was greatly distended. Eight years previously the patient had noticed by accident a swelling in the left iliac region, about the size of a hen's egg, which for a month or two increased in size slightly, then ceased growing and remained stationary till she became pregnant. The legs and thighs were œdematous, and some dyspnœa existed. There was no difficulty in micturition, but the bowels were constipated. Lungs and heart presented no abnormality. Milk could be expressed from the breasts. The abdomen was greatly distended, presenting the appearance of pregnancy at term. It measured thirty-seven inches in circumference at the level of the umbilicus. On palpation, a large, smooth, round, hard swelling was found in the left side of the abdomen, crossing the middle line and being continuous with a swelling on the right side, from which, however, it was separated by a sulcus. The swelling on the right side was elastic in consistence, but two or three hard, rounded nodules could be distinctly made out on its anterior surface. Over it the uterine souffle could be heard, but the fœtal heart-sounds could not be recognized. On vaginal examination the whole cavity of the pelvis was found to be filled with a hard mass, impacted in it and continuous with the tumor above. The uterus appeared to be very much drawn up. Cœliotomy was undertaken, and when the abdomen was opened a large, irregular tumor was encountered, the left portion consisting of an interstitial myoma, the right of the distended uterus. In addition, implanted upon the upper and posterior uterine walls, were several subserous myomata, varying in size from a walnut to an orange. Through an incision in the anterior wall of the uterus a five months' fœtus was removed, which was perfectly formed and had evidently been dead only a short time. The placenta was well developed and was easily detached. An elastic ligature was passed around the uterus and tumors as close as possible to the cervix and secured. The uterus and tumors were cut away and the uterine and ovarian arteries were ligated. The ovaries and tubes were also removed. The tumor blocking up the pelvis was with some difficulty freed from adhesions, drawn up, and enucleated. The peritoneum was stitched round and round with catgut ligatures to the mucous membrane of the vagina. These ligatures were then drawn down into the vaginal canal and the abdominal wound was closed with silkworm-gut sutures. The patient made a good recovery, being dismissed perfectly well in the seventh week after the operation.

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SATURDAY, JANUARY 25, 1896.

IN THE MATTER OF IDIOTS.

THE State Commission in Lunacy of New York have so construed the amended Constitution that a class of inmates of the State Hospitals for the Insane are liable to be left without proper care and supervision. The Constitution provides that there shall be "a State Commission in Lunacy, which shall visit and inspect all institutions . . . used for the care and treatment of the insane (not including institutions for epileptics or idiots)." The Lunacy Commission construes this exemption of institutions from its visitation and inspection to mean that the idiots at present in the State hospitals must be removed, and accordingly a circular has been issued by the Commission to the superintendents, "In the matter of Idiots," directing them to notify friends and county authorities that they must forthwith remove those idiots for whose care the latter are responsible. The superintendents are now engaged in informing the county officials of the names of idiots in their hospitals who must be removed under this order of the Commissioners. This removal of idiots from the State hospitals means that they are to be returned again to the poor-houses from which they were, for the most part, so recently transferred under the provisions of the State Care Act.

The result of this action of the Commission has created great excitement in many counties, owing to the disturbances which these so-called "idiots" create in the poor-houses, and the entire want of adequate facilities for their proper care. In Kings County the Charities Commission has flatly refused to receive these "idiots" unless the Superintendent of the State hospital certifies that in each case the person is not insane. The Commissioners have taken that position under the instructions of the State Board of Charities, which has supervision of the poor-houses of the State. Meantime, this most helpless and pitiable class of dependents, for which the vaunted State Care Act was believed to have done so much, by removing them from the poor-houses, have no legal status in the State or county institutions. The insane idiots of New York are like the bat in the fable, which the beasts would not receive because he was a bird, and the birds because he was a beast.

The position taken by the Lunacy Commission seems hardly tenable in view of all the facts. The new Constitution simply prohibits that body from visiting and inspecting institutions for idiots. It in nowise forbids the reception and retention of persons duly adjudged insane in the State hospitals, though they may be otherwise classed as idiots. On the contrary, the law prohibits all other institutions from receiving and retaining them in custody except the State hospitals and institutions licensed by the Lunacy Commission for the care and treatment of the insane.

A fair construction of the Constitution and the lunacy laws would seem to lead to two conclusions: (1) that the Commission cannot officially visit and inspect institutions for idiots, and (2) that the State hospitals must receive for care and treatment all persons taken to them with duly prepared papers adjudging them insane. Nor are these two legal requirements incompatible, for while the Lunacy Commission is prohibited from visiting and inspecting poor-houses, the insane of the poor-houses must be removed to the State hospitals. So it has followed, under the operations of the State Care Act, that among the insane persons found in the poor-houses were some who are now called "idiots." They were transferred to the State hospitals as insane, and were by them duly received, registered, and held in custody. The fact that subsequently

the Constitution limited the visitations and inspections of the Lunacy Commission would not seem to change the position of a certain class of insane in the State hospitals. It would be quite as consistent for the Commission to order the removal of all insane blind or deaf from these hospitals, because that body is not allowed to visit and inspect the institutions for the blind and deaf.

THE ECONOMIC ASPECT OF CERTAIN MUTILATING OPERATIONS UPON MEN AND WOMEN.

ALLUSION is made to those operations by which not only are important organs removed from the body, but by which the body is also forever rendered incapable of fulfilling one of the most important functions of life—that which pertains to reproduction. These organs, the ovaries in women, the testicles in men, are essential to the propagation of species; without them there can be no reproduction.

There is no occasion for argument in all those cases in men and women in which these organs are hopelessly—so far as human knowledge and judgment can determine—diseased. For such individuals, reproduction being out of the question, and the diseased organs a menace to comfort if not to life itself, there is no more impropriety in their removal than there is in the removal of any other structure or tissue which is injurious to the body at large. There are other cases in which the removal of the organs is more or less debatable, as in cases in which one ovary is hopelessly diseased and the other only slightly so; also many of the cases in which removal of the testicles is advocated for the relief of enlargement of the prostate gland. One may err in such cases by either radical or conservative treatment. Still further, there are cases in women in which the ovaries are sound or sufficiently so to enable menstruation and ovulation to continue, and in which the ovaries are removed because of some serious difficulty in structure or function in some other part of the body. Such conditions as fibroid tumor of the uterus, obstinate and intolerable dysmenorrhœa, the severer degrees of chronic endometritis, etc., are examples of disease in which the mutilating operation referred to has often been followed by the most satisfactory results. It must not be forgotten that in the great majority of the cases which have been considered the individuals are incapable of reproduction, whether the diseased organs are removed or not. Removing the organs does not change the sterile condition, but it frequently does so improve the patients' condition in other respects that they are no longer a burden to society, but become able to take care of themselves or even to assist others. For all such cases the operation represents a decided economic gain. As to the others in this group in which organs only partly diseased are sacrificed, or those which are not at all diseased are sacrificed for the advantage of the body at large, no doubt mistakes are sometimes made. In the anxiety which some men seem to have to roll up large series of cases we believe they often operate prematurely, not to say without just cause. This barbarous *furor secandi* which consumes some operators is like the savage's desire for scalps, and does not always represent such work as would bear close scrutiny in all its details. Nowadays, when the world is so full of men who are removing ovaries by hundreds and uteri by scores, it is well to make some inquiry as to the antecedents of both the operators and their patients should our opinion be asked as to the justifiability of this unsexing by wholesale.

It is unbecoming to judge of any man's work without knowing the details, but we cannot help the belief that among the thousands and tens of thousands of women who have been unsexed in the last twenty years the unnecessary operations have formed no inconsiderable percentage, and thus has occurred a great economic loss, not only in the number of fatal cases, chiefly unreported, of those who were more or less valuable elements of society, but in the check to population by the sterilization of the many who were capable of bearing healthy children and properly rearing them.

We are not of the number of those who believe that the chief object of a woman in life is to bear children. Ability to do so is, however, of great importance, and there are probably few physicians or surgeons who would care to marry one whom they knew to be without this ability.

For obvious reasons, it need not be feared that the operation which has proved so effective for the relief of enlarged prostate will ever become as popular as ovariotomy, common though enlarged prostates are.

There is another side of this question relating to the cases of severe disease in men and women, which require removal of the essential generative organs, in which the general practitioner in charge

is at fault, because he fails to appreciate the gravity of the situation, temporizes and palliates until an abscess ruptures internally or general septicæmia occurs, or a crisis of some other character arrives, the result of which is that the slenderest possible chances of relief by surgical measures remain, and the patients either die without an attempt being made to help them, or in consequence of an operation, in which case the last man to see the patient usually gets the blame. Such procrastination in these times is seldom justifiable. There are too many available men in most communities who are skilful in handling such cases if given reasonable conditions for success, to warrant the general practitioner in conducting them unaided until the time for interference has gone by. This also represents economic loss from another point of view.

We now come to an aspect of the subject which will doubtless excite opposition, and may seem inconsistent with the spirit of the remarks which precede. It is not the first time that it has been broached by us or by others. It is a subject which must come up for agitation, as a matter of scientific and economic importance, and will be settled *pro* or *con*, we believe, in the near future.

It concerns the sterilization of the irreclaimably bad in the community, both males and females, for the protection of the community, by removing at least one potent source of supply. It is idle for anyone to claim, in these times, that heredity does not exert a most powerful influence upon the physical, moral, and intellectual development. Men or women with bad characteristics will breed their like. Thieves, harlots, and drunkards consort together, for they have similar tastes. Add to heredity the vicious environment to which the children of such parentage are subjected, and we can hardly fail to have criminal traits and tendencies continued and intensified. The well-known statistics which were compiled a few years ago, and which traced the history of a woman of vicious propensities, who finally brought up in an almshouse, showed in the children and grandchildren, many in number and invariably (we believe) criminal in tendency, what an enormous load society takes upon itself in allowing such depraved beings to reproduce their kind indefinitely. Communities offer bounties for the destruction of noxious beasts and vermin, and yet offer no resistance to the reproduction of elements far more dangerous than these. From the humanitarian standpoint such sterilization is robbed of objections which a few years ago could have been urged against it, for it can be done painlessly and with almost no danger to life.

Naturally it would have greater terrors to men than to women, especially to young men, by whom the greater number of crimes are committed. It should be applicable only to incorrigible offenders; that is, to those who have been sentenced to prison two or three times for serious crime, or to those who are guilty of crimes which are particularly revolting and shameful. It would probably act as a deterrent to the commission of many crimes, not alone from the sense of personal loss and defect involved, but from the disgrace which would attach to it and the exposure to ridicule.

It would certainly be offered as a substitute for lynching in those parts of the country where rape and similar deeds of violence are said to abound, and might tend not only to diminish the number of such lawless procedures, but also tend to diminish the crimes which evoke lynching, the latter being manifestly a failure in that respect.

Of course, the scope of this article would prevent us from going into the details appertaining to the suggestions which have been made.

The matter must be treated as any other pathological-sociological subject would be treated, and discussed from its scientific as well as from its sentimental bearings.

BACTERIOLOGY.

UNDER THE SUPERVISION
OF
WILLIAM H. PARK, M.D.

THE PRESENT STATUS OF THE USE OF BACTERIAL CULTURES FOR THE DIAGNOSIS OF SUSPECTED DIPHTHERIA.

THE making of a true diagnosis in every case of suspected diphtheria is at the present time not only of importance for the public health and for prognosis, but also as a guide to the use of the antitoxin in treatment. That we may judge fairly the exact value and meaning of a bacterial examination let us consider carefully the nature of the information which we derive from the examination of the bacteria on the coagulated blood-serum after a stay of twelve to fourteen hours in the incubator after its inoculation with the throat-secretion or exudate from a suspected case of diphtheria.

The facts upon which the use of cultures for diagnostic purposes is urged are as follows:

1. That in all cases of diphtheria the diphtheria-bacilli are present.

2. That those cases in which the diphtheria-bacilli are absent, not only do not themselves develop the characteristic lesions of diphtheria, but never communicate true diphtheria to others.

3. That many of the less characteristic cases of diphtheria and pseudo-diphtheria are so similar in appearance, symptoms, and duration that it is impossible to separate them by any other means than through cultures.

4. That the throats of many healthy persons who have been in contact with diphtheria or with articles infected with the bacilli become infected, and that although they may never develop diphtheria, yet their throat-secretions are equally as dangerous as those of convalescent cases in whose throats the bacilli persist.

5. That the examination of cultures made upon solidified blood-serum under the proper conditions forms, with few exceptions, a reliable method of determining whether the diphtheria-bacilli are present or absent in the suspected throat.

The very nature of the bacterial examination of the growth on the coagulated blood-serum suggests that it must to a certain extent be incomplete.

To be of practical value to the physician the report must be received within twenty-four hours of the time of the making of the culture. This necessitates that the diphtheria-bacilli be differentiated from all other bacteria simply upon the examination of the stained cover-glass preparation from the original serum-tube. Anyone who is familiar with bacteriology knows that this is impossible. Very fortunately, however, there are very rarely any other bacilli in the throat which both grow upon blood-serum and have the same staining and morphological characteristics as the diphtheria-bacilli.

This practically excludes the error of confusing the virulent diphtheria-bacilli with any other bacteria except two forms—the so-called pseudo-diphtheria-bacilli and the non-virulent bacilli.

The pseudo-diphtheria-bacilli present sufficient peculiarities to be separated from all but a few of the forms of the less characteristic diphtheria-bacilli. The virulent and non-virulent diphtheria-bacilli present, however, identical appearances and cultural peculiarities and can only be separated by animal inoculation.

These non-virulent bacilli are most abundant in those places where diphtheria has long been prevalent, and are, in fact, virulent bacilli which have lost their virulence.

These bacilli, like the pseudo-diphtheria-bacilli, are, so far as we know, incapable of causing disease. They exist in about one per cent. of the throats of persons living in great cities.

The practical difficulty which the non-virulent bacilli cause in the use of cultures for diagnostic purposes is apparent. If a culture from a suspected throat which presents no characteristic lesions contains bacilli looking like diphtheria-bacilli, we cannot positively state whether they are virulent or not. The amount of probability in any case would depend upon the prevalence of the non-virulent forms in that city or neighborhood. Thus, to give an example:

If there develops in a throat in which non-virulent diphtheria-bacilli exist a simple follicular tonsillitis, cultures would contain bacilli identical in growth with the virulent germs, and the report of such an examination would indicate that the case was one of mild diphtheria. The bacilli in this case, however, would still be non-virulent, and have no connection with the tonsillitis. Another limitation in the value of cultures is that they show only in the roughest kind of a way how many bacilli are in the secretion of a suspected throat; and, on the other hand, they do not absolutely prove that the bacilli are entirely absent from the upper air-passages because they were absent upon the limited portion of mucous membrane touched by the swab.

This is really of great importance in laryngeal diphtheria, for it has been frequently found that the bacilli were at times scant or absent in the pharynx while abundantly present in the larynx and trachea.

To sum up, therefore, we may say that if a culture made under proper conditions contains no bacilli similar to those of diphtheria, it may be concluded that the throat from which it was made contained no diphtheria-bacilli, and that the disease was not diphtheria. If, however, the culture contains bacilli having the characteristics of the diphtheria-bacilli, we can only conclude, unless we wait for animal inoculation, that the bacilli are in all probability virulent. The degree of this probability in any given case will depend greatly on the history of exposure and the lesions present.

In view of this doubt, wherever possible the virulence of the bacilli in the mildest cases should be tested, and where this is impossible health-departments may find it wise to arrange it so as to allow the physicians themselves to exercise a certain amount of responsibility in determining whether cases which have no characteristic symptoms, and yet show bacilli in their cultures, should be treated as diphtheria or not. Undoubtedly, if this were done, a certain number of mild cases of diphtheria would be freed from strict isolation and some harm result; but, on the other hand, physicians would more freely seek the aid of cultures in these light cases, and also co-operate more heartily with the health-authorities. Thus in the end many more of the lighter cases of diphtheria would be partially isolated and receive, when necessary, injections of antitoxin for treatment or immunization.

THE POSSIBILITY OF THE MAINTENANCE OF ANIMAL LIFE WITHOUT BACTERIA IN THE ALIMENTARY CANAL.

SOME ten years ago Pasteur appended to a publication by Duclaux a note in which he expressed his deep interest in the question of a possible relation between bacterial life and animal nutrition. He had often, he said, in his talks with young scientists, spoken of the interest which would attach to attempts made to nourish a young animal (rabbit, guinea-pig, dog, or chick) with food completely deprived of bacteria. He was inclined to believe that life might be found impossible under these circumstances, and suggested that if this point were once proved, further experiments might be undertaken in order to determine the organism, or group of organisms, best suited for aiding in the normal processes of digestion. These suggestions of Pasteur attracted considerable attention, but, as is too often the case, a number of individuals, failing to distinguish between a mere statement of opinion and a proved fact, took it for granted that the presence of bacteria in the alimentary canal was absolutely essential for the maintenance of animal existence.

Nencki showed that the digestive ferments by themselves, in the absence of bacteria, are able outside the body quickly and easily to transform food-stuffs into substances ready for absorption, and the alterations which certain substances, the albuminous, for example, undergo through bacterial action, are at first similar to those which result from the action of the digestive ferments. But here the similarity stops, for the end-products of bacterial decomposition are quite different, food-stuffs under their action being split up finally into aromatic acids, volatile fatty acids, phenol, kresol, indol, skatol, carbon dioxide, hydrogen, methane, and hydrogen sulphide; *i. e.*, into substances which no longer possess any value as foods, and may even, under certain circumstances, prove injurious to the individual in whose alimentary tract they are manufactured. The only possible way of settling the question, however, once it had arisen, was to submit it to actual experiment, and this has recently been done by Nuttall and Thierfelder, in the Hygienic Institute of the University of Berlin.

The employment of the chick, as suggested by Pasteur, was found to be inexpedient, since a certain number of hen's eggs are always infected. The animal found by the experimenters to be most suitable was the guinea-pig obtained by Cæsarean section. This animal was chosen on account of the ease with which it can be reared on undiluted cow's milk, and also on account of the independence which young guinea-pigs manifest from the moment of birth.

The apparatus devised for the reception of the young guinea-pig, after removal from the body of its mother, though somewhat complicated, is relatively simple when one considers the many difficulties which had to be met. A full description of it would be out of place here, but it is of interest in reading the original article[1] to find how each detail was gradually worked out. Suffice it to say that the handling and feeding of the animal, the method of supplying it with air, the removal of excreta, etc., were all finally arranged, so that all danger of bacterial contamination was obviated. It is worth noting that the main difficulty encountered was not in the bacteriological technique itself, but in the disposal of excreta, so that the moisture of the latter should not condense upon the bell-jar or upon the animal under experiment; this drawback was finally overcome by allowing the excreta to fall into water covered by a layer of oil.

The Cæsarean section on the mother guinea-pig had to be done, of course, under strictly aseptic precautions, and it was found that failure of the experiment through bacterial contamination was most

[1] Ztschr. f. Physiol. Chemie, Bd. xxi, Heft 2 u. 3, Nov. 1895.

likely to occur between the time the abdomen was opened and the moment in which the animal was safely enclosed within the apparatus in which it was to be kept.

At the end of twelve hours the animal was fed with sterilized milk, which was given afterward every hour, night and day. By the eighth day after birth the guinea-pig had taken 330 cm. of milk, and appeared normal, looking as healthy and active as the control guinea-pigs removed from the uterus of the same mother and reared in the ordinary way. At the end of this time the animal was killed, and the body opened aseptically. Neither in cover-slips nor in cultures, aërobic nor anaërobic, from both the small and large intestines, could a single bacterium be demonstrated. The experiment proves, therefore, that a guinea-pig can live at least for eight days on sterile milk without the presence of any bacteria in its alimentary canal. Whether or not an animal can live on a vegetable or a mixed diet under similar conditions has been left for further experiment to decide.

The demonstration of the possibility of growing sterile animals opens up another fertile field for research, namely, the differentiation of the products of bacterial action in the body from those of tissue-metabolism. Investigators have already attempted work in this direction. Thus it may be remembered that Baumann tried to eliminate bacteria and their products from the alimentary tract, by administering calomel to fasting dogs. On the days following the dosage he could find no trace of paired sulphuric acids or of hippuric acids in the urine ; the so-called oxy-acids (hydroparacumaric acid, paroxyphenylacetic acid), however, were present, although in much diminished amounts. Baumann thought, therefore, that the paired sulphuric acids and hippuric acid occurring in the urine of carnivora could be traced directly back to decomposition within the intestine, while the oxy-acids, at least in part, owed their appearance to the metabolic activities of the tissues of the animal itself. As Nuttall and Thierfelder point out, however, there is no good evidence, or even a likelihood, that in Baumann's experiments the intestine was entirely free from living bacteria, notwithstanding the antiseptic action of the calomel, and it is, therefore, quite possible that the small amounts of oxy-acids present in the urine could have had their origin in bacterial decomposition. So far, Nuttall and Thierfelder have been unable to collect from a sterile animal enough urine to permit of such tests, but we are assured that their experiments are by no means as yet completed.

A whole host of allied problems immediately suggest themselves, and it is not improbable that the results of the investigation here reported will mark a new era in the study of the processes of digestion and metabolism. L. F. B.

ECHOES AND NEWS.

ERRATUM. The article on "The Diagnosis and Treatment of Gout," page 64 of THE MEDICAL NEWS, January 18th, should have been credited to Dr. Louis F. Bishop, of New York.

TERRILLON, a distinguished French surgeon, died recently in Paris.

A GRANT of 80,000 francs has been made to the Imperial Institute of Experimental Medicine at St. Petersburg for the purposes of preparing the antitoxin of diphtheria.

DR. E. L. B. GODFREY, of Camden, has been elected Secretary of the State Board of Medical Examiners of New Jersey, in place of Dr. Wm. Perry Newton, who resigned.

NEW ROCHELLE, N. Y., has closed her schools because of the prevalence of diphtheria. The epidemic is reported as quite mild, however, and as nearly as can be ascertained only six deaths from this disease have occurred there within three months.

DR. ABRAHAM WITTON LOZIER died suddenly of heart-disease on the 14th instant. Dr. Lozier had been prominently connected with many educational and charitable institutions during his long and active career in New York City.

AT Montreuil, near Paris, the doctors have refused to give their services to the municipal dispensary, because a woman has been appointed to serve one day in the week. It appears, however, that she is to receive remuneration, while they do not.

THE question of prohibiting the use of matting and other textile fabrics upon the floors of public conveyances, lest they spread disease by collection in them of dried sputum and other morbific material, is now under consideration by the New York Board of Health.

THE Maryland Lunacy Commission in a recent report strongly set forth the baleful influences of hypnotism, especially when practised upon hysterical or nervous individuals, and recommended that public exhibitions of it be suppressed by law.

IT is reported that Emperor William had Prof. Roentgen rush from Wurzburg to Potsdam to give an illustrated lecture to the royal family on his alleged discovery of how to photograph the invisible, and bestowed on him the Order of the Crown, the same second-class decoration that Koch got.

IN the action for $10,000 damages against Dr. Boyden, of Brooklyn, brought by Peter Burggroff for the death of his daughter, which occurred from lockjaw, the alleged result of vaccination, no verdict was reached. The

jury failed to agree, standing 10 to 2 in favor of the defendant.

VIVISECTION IN SWITZERLAND. The inhabitants of Zurich recently rejected, by a vote of 39,476 against 17,297, a proposal for the absolute prohibition of vivisection. On the other hand, a proposal in favor of the protection of animals, with due consideration for the demands of science, was adopted by a vote of 35,191 against 19,551.

AT a meeting of the Medical Faculty of Harvard University on January 4, 1896, a rule was adopted requiring all candidates for admission to this department subsequent to June, 1901, to bring a degree in arts, literature, philosophy, science, or medicine from a recognized college or scientific school. However, the faculty will make exceptions to this rule when individual cases appear to merit such consideration.

NEW YORK CITY at present contains 145 cases of scarlet fever, but the Bureau of Contagious Diseases persists in denying that there is an epidemic. For the past four to six months the public hospitals have found great difficulty in excluding patients with this disease from their wards, where its frequent development is a menace to their usefulness, to say nothing of the aggravating trouble and expense necessary to prevent its spread.

ACTIVE and, it is to be hoped, effective steps are being taken to increase the endowment fund of the Library of the New York Academy of Medicine to $100,000. At the last meeting of the Academy a committee of twenty-five eminent physicians was appointed, who in conjunction with a committee of prominent laymen are to solicit subscriptions. The laymen appointed are Secretary-of-War Lamont, Ex-Governor Flower, Abram S. Hewitt, General E. A. McAlpin, and D. Willis James.

DR. HORATIO C. WOOD was quite seriously injured in Philadelphia on Thursday afternoon (January 16th) in a bicycling accident, and it was only through good fortune that the results of the mishap were not fatal. In attempting to extricate himself from a very uncomfortable position in a crowded thoroughfare, his front wheel caught in the car track and he was thrown over the handle-bar, causing a slight concussion of the brain and two severe scalp-wounds. He was carried to a hospital, but recovered sufficiently in an hour to be taken to his home.

DR. F. W. SHAIN, a prominent physician of Jersey City, fell from his carriage and was picked up dead with a fractured skull on Thursday of last week. While he was driving, Dr. Shain was seen to lean forward as though asleep, and the reins dropped from his hands. The horse walked on, but a moment later the rattle of a Pennsylvania train caused it to shy, and a wheel of the buggy struck one of the pillars of the trestle and Dr. Shain was thrown out. His head struck against the foundation-stone of another pillar and he lay motionless. Dr. Shain had suffered from heart-disease for many years.

FROM Vienna comes the report of some recent scientific advances in photography. It is announced that Prof. Roentgen, of the Wurzburg University, has discovered an electric light which, for purposes of photography, will penetrate wood, flesh, and most other organic substances. Successful impressions were made of the deeper structures of the human body showing the bones and pathological processes, the flesh being invisible. Many other experiments were made, showing that this new light finds in most organic matter no greater obstruction to its passage than glass furnishes to the rays of ordinary light.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THE Ninetieth Annual Meeting will be held January 28th, 29th, and 30th, in Jermain Hall at Albany, commencing at 9.15 A.M. on the 28th, and ending at 1 P.M. on the 30th. Roswell Park, M.D., President.

FINAL CORRECTED PROGRAMME. Tuesday, January 28, 1896. Morning session. Call to order at 9.15 o'clock. President's Inaugural Address. Appointment of committees. Reports of standing committees and of special committees appointed at last meeting. Annual report of the State Board of Medical Examiners, representing the Medical Society of the State of New York. Executive business.

PAPERS. On Serum-therapy: Dr. E. H. Wilson, Hoagland Laboratory, Brooklyn. Water and its Relations to Disease: Dr. W. P. Mason, Troy (late of the Pasteur Institute, Paris). On Sepsis of the Newborn: Dr. M. A. Crockett, Buffalo. Discussion opened by Drs. Jacobi, of New York, and Jewett, of Brooklyn. The Question of Puerperal Self-infection: Dr. Charles Jewett, Brooklyn. A Medico-legal Note: Dr. A. Walter Suiter, Herkimer. Shall the State Attempt to Control Spread of Tubercular Disease? Dr. J. L. Heffron, Syracuse. Discussion opened by Drs. Jacobi, of New York, and Z. T. Emery, of Brooklyn.

Tuesday Afternoon Session. Call to order at 2.15 P.M. Discussion: On Early and Latent Syphilis in Infants and Young Children; opened by: 1. Dr. George T. Elliott, New York, Diagnosis and Treatment. 2. Dr. Ernest Wende, Buffalo, Pathology. 3. Dr. B. Sachs, New York, Nervous Manifestations. General discussion opened by Dr. L. D. Bulkley, New York. Discussion: Diseases of Intrauterine Life: (*a*) On the Part of the Mother: Dr. E. H. Grandin, New York. (*b*) On the Part of the Child: Dr. P. W. Van Peyma, Buffalo. General discussion opened by Dr. Polk, New York. Address: Medical Education of the Future: Dr. Charles W. Eliot, President of Harvard University. On Sloughing Fibroids Complicating Pregnancy: Dr. M. D. Mann, Buffalo. Discussion opened by Dr. Mundé, New York. The Equilibrium-function of the Ear: Dr. Gaylor P. Clark, Syracuse.

Tuesday Evening Session. Call to order at 7.30 P.M. Scorbutus in Infants: Dr. H. C. MacLean, Brooklyn. Treatment of Malignant Disease in So-called Cancer-institutions: Dr. Nathan Jacobson, Syracuse. Alcoholism and Public Health: Dr. H. R. Hopkins, Buffalo. On the Evolution of Pathology. Illustrated by Lantern-photographs of those who have developed the science,

with illustrations from their works: Dr. J. H. Hunt, Brooklyn.

Wednesday, January 29, 1896. Morning Session at 9 A.M. Abdominal or Vaginal Cœliotomy—Which? Dr. J. W. Whitbeck, Rochester. Vaginal Hysterectomy without Ligations: Dr. W. E. Ford, Utica. Complications in Abdominal Surgery Requiring Intestinal Anastomosis: Dr. Vander Veer, Albany. Some Rare Complications of Appendicitis: Dr. Herman Mynter, Buffalo. The Improved Cæsarean Section: Dr. J. Garrigues, New York. General discussion of above papers by Drs. Etheridge, of Chicago; Mann, of Buffalo; Wylie, Mundé, Boldt, Krug, of New York; and McNaughton of Brooklyn. Treatment of Fractures of the Patella by Continuous Extension, without Confinement in Bed: Dr. J. D. Bryant, New York. Early Diagnosis of Tubercular Kidney: Dr. Willy Meyer, New York. The Symptoms and Diagnosis in the Indigestion of Starches: Dr. Reynold W. Wilcox, New York.

Wednesday Afternoon Session. Call to order at 2.15 P.M. Congenital Dislocation of the Hip, with exhibition of case successfully operated: Dr. T. Halsted Myers, New York. Heteroplasty with Celluloid to Cover Defects in the Skull: Dr. Willy Meyer, New York. Discussion: On the Present Status of the Surgery of the Brain; opened by Dr. E. D. Fisher, New York; Dr. M. A. Starr, New York; Dr. Seneca D. Powell, New York. Surgery of the Skull, Dr. B. Sachs, New York. Surgical Treatment of Epilepsy, Dr. Chas. L. Dana, New York. Craniotomy for Imbecility and Epilepsy, Dr. James W. Putnam, Buffalo; Dr. W. C. Krauss, Buffalo; Dr. George Woolsey, New York. Address: Irritation and Counter-irritation, Prof. Wm. Pepper, Philadelphia. Address: Deficient Excretion from Kidneys not Organically Diseased, in Some of the Disorders Peculiar to Women, Prof. James H. Etheridge, Chicago.

Wednesday Evening Session. In the Senate Chamber, 7.45 P.M. Anniversary Address by the President: On the Study of Pathology by Comparative Methods. To be followed by an informal reception in the State Library and inspection of the new Medical Department of the Library. Annual Dinner at the Kenmore Hotel at 9.30 P.M.

Thursday, January 30, 1896. Morning Session at 9.30 A.M. Reorganization of the Coroner System: Dr. W. G. Macdonald, Albany. Distinctive Fractures of Railroad-surgery: Dr. R. S. Harnden, Waverly. Discussion opened by Dr. C. S. Parkhill, Hornellsville. Diabetes and Acetonuria in Children: Dr. W. S. Cheesman, Auburn. Development of Muscular Atrophy on a Basis of Old Infantile Spinal Paralysis, a Favorable Type: Dr. W. Browning, Brooklyn. To be discussed by Drs. C. F. Barber, Brooklyn, and J. W. Putnam, Buffalo. Value of Animal-extracts in the Treatment of Nervous and Mental Disease: Dr. Floyd S. Crego, Buffalo. On the Surgical Treatment of Retroversions and Retroflexions, with Special Reference to Vaginal Fixation: Dr. H. N. Vineberg, New York. Neuritis Complicating Dislocation of the Shoulder and Elbow: Dr. M. A. Veeder, Lyons. Treatment of Aspiration-pneumonia by Drainage by Inversion: Dr. W. W. Seymour, Troy. Difficult Perineal and Suprapubic Lithotomy: Dr. W. Hailes, Albany. Abscess of the Frontal Sinus: Dr. J. P. Crevering, Auburn. Discussion opened by Dr. T. H. Halsted, Syracuse. Some Notes on Trachoma: Dr. M. L. Foster, New York. Tetanoid Hysteria: Dr. Grace Peckham-Murray, New York. Treatment of Œdema of the Lungs: Dr. Louis Faugères Bishop, New York. Treatment of Sciatica with Nitroglycerin: Dr. W. C. Krauss, Buffalo. Trephining for Injuries and Diseases of the Cranium: Dr. W. W. Seymour, Troy. Second Report on a Case of Functional Albuminuria: Dr. Eli H. Long, Buffalo.

OFFICERS AND COMMITTEES.

President, Roswell Park, Buffalo. Vice President, William Maddren, Brooklyn. Secretary, Frederick C. Curtis, Albany. Treasurer, Charles H. Porter, Albany.

Committee of Arrangements: William J. Nellis, Albany; William Hailes, Albany; William J. Morton, New York.

Committee on By-Laws: H. D. Wey, Elmira; A. R. Simmons, Utica; F. C. Curtis, Albany.

Committee on Hygiene: Lewis Balch, Albany; Lewis S. Pilcher, Brooklyn; D. S. Burr, Binghamton; Z. T. Emery, Brooklyn; E. V. Stoddard, Rochester; O. W. Peck, Oneonta; Lucien Howe, Buffalo.

Committee on Legislation: Seneca D. Powell, New York; Maurice J. Lewi, New York; A. Walter Suiter, Herkimer.

Committee on Medical Ethics: John S. Warren, New York; Charles Jewett, Brooklyn; Eugene Beach, Gloversville.

Committee on Prize Essays: A. Jacobi, New York; Henry Hun, Albany; W. S. Cheesman, Auburn.

Committee on Publication: F. C. Curtis, Albany; William Warren Potter, Buffalo; F. D. Bailey, Brooklyn; C. H. Porter, Albany.

Committee on Credentials: D. S. Burr, Binghamton; T. F. C. Van Allen, Albany; M. L. Bates, Canaan.

OFFICIAL LIST OF THE CHANGES OF THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE FOR THE 16 DAYS ENDED DECEMBER 31, 1895.

CARTER, H. R., Surgeon. Granted leave of absence for 12 days, December 17, 1895.

WILLIAMS, L. L., Passed Assistant Surgeon. Granted leave of absence for 15 days, December 30, 1895.

MCINTOSH, W. P., Passed Assistant Surgeon. To proceed from Boston, Mass., to Louisville, Ky., and assume command of service, December 28, 1895.

BROWN, B. W., Passed Assistant Surgeon. Granted leave of absence for 9 days, December 17, 1895.

PROCHOZKI, EMIL, Assistant Surgeon. To proceed from Buffalo, N. Y., to Detroit, Mich., for duty, December 28, 1895.

THOMAS, A. R., Assistant Surgeon. To proceed from St. Louis, Mo., to Boston, Mass., for duty, December 28, 1895.

CUMMING, H. S., Assistant Surgeon. Granted leave of absence for 16 days, December 16, 1895. Leave of absence extended 4 days, December 26, 1895.

BOARDS CONVENED.

Board to revive regulations regarding uniforms, Surgeon Fairfax Irwin (Chairman), Passed Assistant Surgeon C. E. Banks, and Passed Assistant Surgeon B. W. Brown (Recorder), December 17, 1895.

Board for the examination of officers for promotion and candidates for admission to the service, to meet in Washington, D. C., February 10, 1896. Surgeon George Purviance (Chairman), Surgeon H. W. Austin, and Surgeon H. R. Carter (Recorder), December 30, 1895.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

ON THE VALUE OF THE COMPARATIVE METHOD IN THE STUDY OF PATHOLOGY.[1]

BY ROSWELL PARK, A M., M.D.,
OF BUFFALO, N. Y.;
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO.

THE most pleasant, if at the same time the most trying, of the numerous duties which your by-laws entail upon your President is the preparation of an annual address, in which he shall set forth before you the recent progress of our art, or other matters of general professional interest which may prove, if not helpful, at least temporarily entertaining. As I have glanced over the annual addresses of my predecessors, and have noted the wide range of subjects considered by them, and have fully appreciated the value of their work and the eminence of their personalities, I have stood aghast at the task thus set for me. It may happen, however, to any earnest and faithful student of medical science who has made no brilliant discoveries of his own, and who has shown himself nothing more than a zealous traveller along pathways made for him by the feet of others, to view, as it were, regions into which as yet but few paths lead, or which have been untrodden as yet by the footfalls of his fellow-men. Into such regions he may yearn to explore, yet be without the necessary training or preparation. Yet, seeing these, he may sometimes do good by pointing out to others where their own explorations may be required and their time well spent. It must be in some such capacity, if at all, that I must serve you to-night.

I have, consequently, selected for the topic of my address a subject upon which I have at least reflected long and seriously, and have time and again yearned for light that either was not provided or was too obscurely hidden, and in such a way as to be concealed from easy appreciation. My plea, then, with you to-night is for a further extension of methods of comparative study in the investigation of disease and departure from the normal standard. Some such illustration, perhaps, as this may serve better to make known my meaning: There have been various methods devised of studying the languages, living and dead. An extreme in one direction has been to take the advanced grammar, and thus, beginning at the top of the linguistic ladder, gradually work down—a method by which even to-day too many young men waste their time over the study of Latin and Greek, as well as of French and German. The other method, the so-called natural method, has been to begin with the simplest parts of speech, to deduce grammatical rules as the scholar advances, and to carry him along by easy and progressive stages until, at the culmination of his studies, parts of speech and rules for their use come as naturally as do the words which are to be marshalled together into grammatical form. The introduction of methods like this has robbed the study of languages for the children of to-day of most of the terrors which they presented for the children of my generation. The same comparative methods are evident in all the best educational institutions, and are being constantly improved by the best educators. The tendency toward the comparative study of the various branches of science is perhaps happily illustrated in the recent appearance of a text-book on comparative geology (by Keyser). This, perhaps for the first time, does for geology what comparative study has accomplished for botany, zoology, etc. Most of the text-books on geology are confined to the geological phenomena of a single country, the rest of the world being dealt with in a very careless fashion. To be sure, this is in the main due to the fact that the writers worked within altogether too narrow limits, and have little or no personal acquaintance with conditions in countries which to them are foreign. Nevertheless, the key to the great geological problems of our earth is not to be found in any one region, but must be comprehensively viewed and studied. If, now, these methods be important in linguistic study, in geology, and in all the various branches where no one will deny their importance, how much more important are they for us in the study of the medical sciences! If we stop a moment to inquire why it is that this common-sense method of study, as all will allow it, has been so generally disregarded in the medical schools of the world, the answer will probably be found in the utilitarian view, held by many that the time is not sufficient to permit of beginning at the bottom and working up, and that after all it is dis-

[1] Being the President's Annual Address before the Medical Society of the State of New York.

Nulla autem est alli pro certo noscendi via, nisi quam plurimus, et morborum, et dissectionum historias tum aliorum, tum proprias collectus habere, et inter se comparare.—MORGAGNI.

ease in the human race rather than disease in the lower orders with which we are especially to concern ourselves. Potent as is this view in the minds of most, it nevertheless does not permit of full justice to the subject, and should not be permitted to stand in view of the really higher interests of medicine.

While a man may be perfectly competent to reduce a fracture of a fibula, and quickly put the patient upon his feet with a useful limb, who has never heard that the fibula is a disappearing relic, and that in many of the lower animals it is a larger bone, there nevertheless is no reason why in the interests of higher medical education this fact should not be perfectly familiar to him and to all. The man who removes an ovarian tumor successfully and conducts his patient through a speedy convalescence must certainly be considered a competent practitioner of his art, though he may have no comprehension of the peculiar findings within such a tumor, and may be as much at a loss to account for the teeth, the hair, the rudimentary mammary gland, or other structures which he may find there as the original possessor of the growth. Does it follow, however, that he can be considered a really educated man if he prove himself thus ignorant? The surgeon who exposes a dermoid tumor within the cavity of the cranium may have the technical skill by which to remove it and secure a primary wound-healing, and yet be utterly at a loss to account for its presence in that location. Is he to be content with his surgical skill, or are we to expect of him that he shall possess something more than this and be able to tell as much as anyone may know of the secret of such a growth?

I think you will all agree with me that such knowledge is most desirable, and that it really has a large degree of practical or utilitarian value. But how to get it and how to teach it is the great problem before us, and how to disseminate more widely the knowledge now possessed by a few is one of the tasks which the wise men of the present have to set themselves.

First of all, we cannot for one moment afford to lose sight of the fact that our bodies are but aggregations of cells, each of which has its own individuality, even to some extent its own autonomy. Every organized being is then a republic of cells, but it is not yet widely enough appreciated that, as in a republic of citizens, a little disturbance in one region may bring about by most unexpected agencies a disturbance or even a revolution, so in the bodies alike of plants and animals cellular disturbance at one point is sure to affect to greater or less extent the entire economy. In the higher animal and vegetable forms, however, the cellular organization is altogether too complex to permit of a study of the conditions which so disturb inter-relation of parts. If we are, then, to acquire any knowledge or idea as to what goes on within such wonderfully complex organisms as our own, we must begin by the study of those which are vastly simpler. In this connection I want to lay before you as a model in my estimation of what such study should mean the *Researches on Inflammations*, by that indefatigable Russian biologist, Metschnikoff, who has for some years been so prominent a figure in the Pasteur Institute in Paris. If there be any one phenomenon concerning which we need more positive and exact notions than another, it seems to be this very one of inflammation. The changes attending it in complex organisms are so complicated and give rise to such wide diversity of disturbance, tissue-alterations, and results, that we cannot afford to disregard one thing concerning it which may be gained from any source. Although this has been conceded for centuries, and although John Hunter appreciated the fact, and like many others worked long and arduously at the solution of some of its attendant problems, it was Metschnikoff who, more than any other living man, in my estimation, has made the process clear, simply because he began to study it in the lowest forms of living beings. To anyone who will read his fascinating work, the advantages of this method will be made so clearly apparent that he will wish that every pathological laboratory had its corps of Metschnikoffs in order to pursue work along the same general lines and by the same methods. But for our purposes and in various ways I would go even further than this. I would say that the beginning of all pathological processes, as of all physiological, should be studied in the vegetable kingdom first, where may be found the parallels of all those changes which go to constitute disease, even of complex type, in the human race. The elements of plant-physiology may be reasonably mastered within a comparatively short time without going too deeply into the principles of ontogeny and phylogeny; but if the circulation, for instance, is to be studied, it certainly can be best studied under conditions where it is most simple, and I would vastly prefer to see the student trained to know how the sap makes its way through the length and breadth of a tree before he begins to think of how the blood circulates through his own frame. It is better that he should work up to a knowledge of the circulation if his medical education is to be complete, than work down to the simple after having begun with the complex. After he has mastered the normal circulation in plants, he will then be in a position the better to appreciate what takes place when a plant is wounded, and he will learn to distinguish between the true hemorrhage of vegetable organisms and a true exudation, and the differences between mere outpour of vegetable juices due to

solution of continuity, and the pathological secretions which takes place when the parts have been irritated by parasites, exposure to injuries by vicissitudes of weather, or have had the character of their secretions materially, sometimes almost totally, altered by variation of surroundings, changes in soil, etc.

How much better, then, to begin studying the activities of cells in the lowest and most immature organisms first. If the study be begun in this way, it will be seen that the formative activity of cells dominates over their secretive activity, and it will be found, for instance, that those cells which have passed out of the gland as waste products may remain and proliferate more or less independently. This, by the way, may be a factor in explaining the genesis of cancer; *e. g.*, in the breast. It will be seen, too, that the behavior of cells as well often as of organs (composed of them) depends in large degree upon the quantity and quality of nutritive material which is at disposal. Thus, among the bees it depends upon the nutrition supplied to the female larva whether it shall remain a neuter or become a sexually perfect female.

There is one law, however, of cellular physiology which is apparently never violated, and that is, that a derivative of one germ-layer never by any chance develops a structure originally derived from another. Consequently after differentiation of the blastodermic membranes no wholly indefinite cells are formed. Those cells which are thereafter formed can develop only certain tissues. But all these cells are directed by some unseen force, even when they appear uncontrolled, and in a suitable environment will always tend to arrange themselves into the form of the organism from which they originated. Thus, a small detached bit of hydra soon moulds itself into the complete shape of the parent organism. The property of selective assimilation seems to be possessed by cells in common, and those of a given part appear to have the power of moulding adjacent material into cells after their own kind. This is shown by the fact that a tail is reproduced where there was a tail, and a leg, and only a leg, where there was a leg. These processes have been likened to those by which a crystal reproduces its lost apex when placed in a solution of identical material. The lower the animal or vegetable form the more complete is the power to reproduce the lost parts; the higher we ascend the scale the more limited does this become, until in man the ability to reproduce lost parts is almost completely gone, and when noted at all is seen only during the beginnings of life or its early stages, at a time when there is still more or less embryonic tissue which can functionate. Thus, during the early periods of embryonic life there may be more or less complete reproduction of fingers after injury, though nothing of the kind occurs in adults. There are cases on record of reproduction of supernumerary digits after amputation, which seems the more remarkable because the normal digits have no such power of regrowth, the nearest approach being the occasional appearance of imperfect nails on finger-stumps after amputation. Simpson several times noted that arms amputated *in utero* by bands grew again to a certain extent, while in one case the extremity was divided into three minute nodules, on two of which small points of nails could be detected. This is probably as far as attempts of this kind have ever been observed in our own species. In the same way in plants, adventitious buds, like adventitious fingers in the fœtus, differ from the normal only in respect to position. Such buds originate in the same way and have been found upon almost every part of plants. They sometimes develop in extraordinary numbers upon the stem and branches of trees owing to some interference with the vegetation of the normal buds. More easy adaptation of part to circumstance is, however, seen in the vegetable than in the animal kingdom. Du Hamel planted a willow with its branches in the ground and its roots in the air and saw the roots become covered with buds, while the budding branches produced roots. Adventitious buds may also be found on the petiole, lamina, and other parts of the leaf. Thus the bud, like the ovum, is to be regarded as an individual vital centre. Parthenogenesis, which never occurs in the animal kingdom, may be frequently seen in the vegetable, and buds apparently may arise where undifferentiated cells are present.

In either kingdom, however, so soon as cells begin to specialize they lose the primary general function or power of reproducing the entire organism, apparently because all of the original protoplasm has been specialized and used up. In the higher organisms certain cells never attain high development, but remain always in a lowly organized condition and serve either as germs for reproducing the entire individual or for forming and maintaining various tissues and organs, remaining, as it were, in reserve. Such cells are found in all growing organs and tissues, and, according to Williams, are the only real cancer- or tumor-germs. Most of the specialized cells of an organism produce only those which are incapable of acting as germs for an entire individual; *e. g.*, epithelium always produces epithelium.

Since much of what I have to say to-night pertains to the genesis of tumors, it may be worth while to reiterate Williams's views to the effect that every phenomenon of neoplastic growth has its counterpart in the normal processes of evolution, and that the better we understand the latter the better we shall appreciate the former. On the one

hand, there is continuous perfecting of bodily structure by differentiation; on the other, continuous transition from lower to higher types of development. Each individual reproduces in its own life the most important morphological changes through which its long line of ancestors has passed. In every act of reproduction a minute quantity of protoplasm is transferred from the producing to the produced offspring, and along with it the molecular condition peculiar to the parents; and upon this heredity depends. The persistence of impressions, or what has been called unconscious memory in protoplasm, is the property upon which, in ultimate analysis, the phenomena of heredity will be found to depend. Organisms which have undergone impressions under new conditions tend to return to the original structure or habits when restored to original surroundings. When we seek for the influence most potent to produce variation in protoplasm, we must agree with Darwin, who says: "Of all the causes which induce variability, excess of food, whether or not changed in nature, is probably the most powerful." Viewed in this light, the sudden development of a neoplasm in an otherwise healthy organism is the outcome of gradual and continuous changes in the evolution of the cells of the affected part, owing to minute and as yet unrecognizable changes in the nutrition of the cells. Regard for a moment the effect of too much or too little nourishment. Young trees, for instance, often remain sterile because of too rich soil and too much excess of fluids; while too warm a temperature hastens the second sprouting, the necessary juices are kept away from the first, and fruit blossoms may be prevented from developing. Among the little insects known as plant-lice agamic multiplication continues throughout the summer if only external conditions—*i. e.*, weather and supply of nutrition—are favorable; but when the weather becomes cold and the supply of sap in the plant fails, fertilization of ova is again necessary.

But study vegetable pathology for a few moments, regarding plants as if they were animals and likening the sap to the circulating blood. Carrying out this analogy, the vegetable pathologists describe what they call ischæmia and even necrosis in plants, and show how these may occur from injury to the roots, from interference with circulation caused by grafting, from abusing the tree, from early frost, improper soil, etc. They show also the alteration in natural fluids in the presence of disease; and it is of some interest to know that the secretions of parts involved in necrotic or so-called cancerous changes contain gallic and humic acids. Furthermore, studying the effect of alterations in light and air, they describe conditions of plant life analogous to chlorosis and icterus, alleging perverted nutrition, usually in the direction of too much and too rich food with too abundant moisture as the causes of these conditions. They also describe what they call dry gangrene, while in the presence of stasis with decomposition of the fluids which should be circulating there is sufficient irritation with perversion of nutrition to influence cell-growth into the development of so-called cancer in trees.

In my estimation there is as much hope of getting light upon the vexed question of origin of tumors by the study of influences operating to produce them in plants and trees as from any other source. The influence of certain fungi in producing sclerotic changes in vegetable tissues is also very much in accord with what we know to result in animal tissues from the presence of parasites. There is, for instance, the peculiar fungus known as the peziza, which produces most extensive sclerotic changes, both internally and near the surface. The great beauty of studying disease in vegetable life is the abundance of material and the absence of sentiment concerning its utilization. A great deal of vegetable pathology is yet to be learned by the inoculation-method, since there is just as much possibility of deliberately infecting trees by artificial inoculation with various parasites, to them pathogenic, as there is in our pathological laboratories of infecting animals.

And here, by the way, the expert agriculturist or the student of scientific agriculture, horticulture, etc., in our agricultural colleges is a person whom the veterinarian and the human pathologist would do well to cultivate, since to such a one are known many facts of to him great practical importance, which yet have a significance reaching far beyond his environment and embodying general principles with which we ought to be equally familiar, although, sad to say, we seldom are. I often consider it a great pity that there are not societies where men in these various walks of life may get together and disseminate more widely a knowledge which physicians as such rarely, if ever, possess, but which could be by such communications made of great value.

For example, the reaction of vegetable tissue after wounds is even to physicians most instructive. If after bruising of a plant, for instance, the bruised portion be left *in situ* it decomposes easily, while the wound itself heals with difficulty or even not at all, and necrosis of surrounding tissue often follows. Is not this the exact counterpart of what one might say of wounds of the animal body? It is of passing interest even to remember that hailstones may produce injuries, contusions, etc., which shall materially affect the nutrition of a plant or tree, and that contused wounds made in this way may be followed by more or less disastrous results. There is also a difference between what we may call the bleeding of a tree and pathological secretion after certain injuries. The latter originates in and near the injured part;

the chemical nature of the secretion is altered, and a variety of materials, to us most useful, are in this way produced, although the causes have in but rare instances been studied out. For example, the various resinous materials, and such substances as tragacanth, manna, and other gums, are all pathological secretions produced in consequence of more or less specific irritations. Then, again, open wounds in trees give peculiar opportunity for microbic infection or that by other parasitic fungi, which, as a rule, cause necrosis of the plant- or wood-tissue. Such infections, however, in trees rarely spread widely, and the resulting necrosis is for the most part local. Only those products of decomposition which are soluble are diffused into surrounding tissues, where their influence may be injurious. Hemorrhage, so-called, in plants is the result of a fresh wound, the peculiar juices, sap, etc., exuding, possibly to an extent so serious as to lead to the death of the plant. The most damaging exudate, however, is that of gum from trees after their foilage is out; the reason for which is that the exudate exerts such pressure that there is stasis, and even coagulation of fluids between the cortex and the woody part of the tree, by which circulation is impeded. Again, it often happens, as the result of frostbite during foliage, that the cortex (bark) may rupture and permit escape of this coagulated secretion from the disturbed part. All of which only makes things worse, since there is now thrown out a still more irritating secretion (often spoken of by agriculturists as chilblains), which not seldom forms an open cancer upon the tree. In a minor way, pathological flow of gum is also produced by the stings of beetles, and of many other insects which lay their eggs in the cortex, the lesion then being strikingly analogous to that produced beneath an animal's skin by the sting of certain insects, etc.

Yet different is the peculiar yellowish, sticky, sweetish-tasting substance, of unpleasant odor, often seen upon the upper surface of the leaves and stems of many plants, where it may gather within a few hours. This is commonly spoken of as "honey-dew" (melligo). It is an abnormal secretion of certain plants whose juices are rich in sugar. It is most commonly found in the spring after sudden changes of temperature, escaping from the cells, through the pores, upon the surface of the plant, where, combining with the moisture of the atmosphere, especially during the cool of the night, it is precipitated upon the surface, thus closing the pores from which it has escaped, and interfering with their function as well as with the growth of the plant. This may be washed off during a severe rain; but if not removed by natural processes, is liable to ferment, it being quickly attacked by minute fungi. The benefit to infected trees and plants of severe rain and wind, which are thus destructive agents of these fungi and permit the re-establishment of normal vegetable function, is then most easily appreciated.

In plants and animals alike, the process of repair and the neoplastic tendency are closely allied, differing only in degree. The new growth of repair serves to replace that which has been lost; while that of neoplasms is indefinite and knows no bounds, the subordination of local processes to tissue-necessities and to specific hereditary tendencies having been lost.

The *formation of tumors in trees* seems to me a subject of very great interest. All the woody tumors have been grouped in a general way under the term "xylomata," while among some of the botanists they are indiscriminately called cancer. In the majority of cases the so-called cancers of plants occur around the sites of previous injury, where the natural process of healing has been interfered with, and where the cambium produces an abnormal amount of parenchyma instead of healthy wood. Lesions of vegetable tissue produced by frostbites are particularly liable to be followed by these xylomatous formations. They may also be produced by the stings of many of the small parasitic animals, like plant-lice. The pyrenomycetes are known to be the cause of some of the xylomata. In the populus tremulus, for example, the stems and branches often show tumors of varying, even of large, size, the hypertrophy commencing in the cortex, involving all or only part of a limb, being followed by swelling of the wood proper, and later perhaps by destruction of the cortex by frostbite, with exposure of the wood beneath, necrosis ensuing. The importance of the lesions produced by exposure to cold is not generally realized. It is, moreover, of peculiar interest that trees inoculated with cancerous sprouts or grafts become themselves cancerous (Lucas). Lorauer has described two forms of so-called cancer in the apple-tree, both of which seem to result from frostbite—one a rose-like growth with a necrotic centre surrounded by terrace-like edges, enlarging yearly; the other, a closed form of growth appearing upon branches, attaining a size three or four times that of the plant, with a funnel-like depression, the edges of the original lesion rolling in toward each other instead of diverging as in the previous case. Physicians are made familiar with a very limited number of these xylomata when they study the materia medica of the astringents, and are told about the origin of gallic acid. The student is informed that the nutgall is the result of irritation produced by an insect, and that perhaps at least one hundred species of gall are known upon the oak; but here his acquaintance with the xylomata ceases, and he is taught no far-reaching lesson from this fact in vegetable pathology.

Perhaps the most instructive animal-parasites of

trees and plants to watch and study are the so-called plant-lice, since they pass their whole lives upon plants and draw from them their nourishment. These little insects fasten upon the plant by suction, puncturing the part and producing an irritative action which is followed by a variety of lesions, from hypertrophy of irritated tissue to speedy necrosis. The hypertrophies may have the character of true galls. One form of plant-mildew indeed is produced by these same little animals, being in effect the empty sloughs which they leave behind and which remain as a white mass upon the green surface. These same plant-lice are the active agents in the production of certain tumors often spoken of as cancer. But it is especially the so-called blood-lice, which live in young plants and thrive best in fresh wounds, which lead to most marked neoplasms. The blood-louse is an almost motionless parasite, which attacks young plants upon wound-edges, where it finds the tissues thin enough to have ready access to the plant-juices. When this parasite has fastened, the cambium becomes more active and hypertrophied, while the plant-cells, being now exposed, absorb moisture and swell even to the point of bursting. By this means long, elliptical clefts are formed, and these often become the site of so-called cancers. It will thus be seen that nearly all, if not all, of the so-called xylomata are really of parasitic origin. It will not do, however, to argue too loosely from this fact that the same thing is true in the animal-world. We at least have not yet sufficient evidence to make so positive a statement.

The xylomata have been divided by Williams into three main groups:

A. Discontinuous or circumscribed growths, to which the vague name of "knaurs" should be restricted. This includes nodules so often met in the bark of common trees. These are usually rounded swellings in the deeper part of the bark, varying in size from a pin-head to a cocoanut, usually encapsulated, often with fibro-vascular pedicles connecting broader portions with the woody tissues of the trunk or stem. These on section consist of dense wood showing all the structural elements of the tissue from which they spring, only atypically arranged. Most of these tumors arise from disorderly growth of adventitious or dormant buds, which may remain in quiescent state for years and then develop renewed activity. These tumors may even be utilized for purposes of propagation, as in the case of buds of some species of apples, which produce both roots and leaves in abundance.

B. Continuous tumors, corresponding to exostoses in animals, presenting as woody outgrowths of the trunk or plant. They may attain great size, weighing fifty pounds or more. They seem to arise by excessive local cell-proliferation of the cambium.

C. Totally new growths, presenting a surface thickly studded with shoots and stunted branches. This is a combination, in fact, of exostosis with diffuse bud-formation—that is, of the preceding forms.

For the cellular pathologist, then, a tumor in an animal or upon a tree is practically the same, it making no difference even whether it occur upon the bark, upon the leaf, or anywhere, provided only that a previous pathological lesion has occurred. The nut-gall which arises in consequence of the puncture of an insect, the tuberous swellings which mark the spots on trees where boughs have been cut off, and the wall-like elevation which forms around the border of the wounded surface produced by cutting down a tree, and which ultimately covers in that surface, all of these depend upon proliferation of cells just as abundant, just as rapid, as that which we perceive in the growing tumor in the human body. The process in plants conforms practically to that in animals, both being of the same general type.

Malignancy of tumor-formation is largely a process of cell-degeneration and incompetence. When in animals it begins in mesoblastic connective tissue, the more imperfect the cell-development the more of the round-celled type it assumes in consequence. Hence the malignancy of sarcoma is to be judged of quite accurately by the roundness and incompleteness of its component cells. In benign tumors the reproduction of cells is more orderly, but is not in harmony with the demands of the rest of the system. The simplest of all the body-tissues is its fatty tissue, and fatty tumors are the most frequent of all benign growths; while true gland-tissue, which is most difficult to irritate, furnishes the smallest number. True cancer has been described most attractively as a "parody upon the gland-tissue;" and it certainly is a hideous travesty of its kind. It occurs most often in tissue which has outlived its usefulness, like the mamma, the uterus, etc.; and it is in such tissue, for the most part, that true carcinoma, or the so-called "rebellion of the cells," occurs (Hutchinson), while epitheliomata occur also in worn-out tissue, usually under the stimulus of some irritation. Epitheliomata are rare among the lower animals as compared with man, and when met with at all occur most often in the domesticated animals and those in confinement. Sarcomata are common in all classes of animals, from the fish upward; but even these are more common among those ordinarily domesticated. (Possibly this is only an apparent prevalence rather than a real, because of much greater familiarity with animals in domestication.) Carnivorous animals are more prone to malignant disease than are the herbivorous, while the reverse is true with regard to liability to tuberculosis. Cartilaginous tumors, particularly in the breast, are much more common in animals than in man. The quadrumana, however, manifest but

little disposition either to neoplasms or to tuberculosis.

In cancer atavism, or reversion to an earlier type, may be traced back to the hydroid stage, where simple fission is the prevailing method of multiplication; in consequence of which we have a longer-lived and more aggressive cell-growth, which we call malignant. If a mesoblastic cell be the ringleader instead of an epiblastic, we then have sarcoma with its less brilliant but more stable cellular achievements (Hutchinson).

These neoplasms are not peculiar, as will be seen and as has been seen, to man, nor even to animals, although it must be stated that epithelial neoplasms are of rare occurrence in the lower animals as compared with mankind, and that they are apparently more common among the domesticated than among wild animals. On the other hand, sarcomata have been met with in nearly all classes of animals, from fish upward, although these also occur most often among the domesticated. Dogs, horses, asses, and pigs are particularly liable to sarcoma of the testicle. Horses, especially those of light color, are most prone to melanotic sarcoma of the anal region. Horses are also quite often victims of psammoma in the brain. According to Rayer, carnivorous animals are more prone to malignant disease than herbivorous. The benign tumors, like fibroma, enchondroma, and osteoma, are almost as widely diffused as sarcoma. Fatty tumors are frequently seen in domesticated animals. Mammary fibro-adenoma among dogs and cats is fairly common, and chondroma of the mammary gland is much more frequent among animals than among man. Cystic ovaries are also common in the domestic animals.

(To be concluded.)

POST-MORTEM CÆSAREAN SECTION, WITH DELIVERY OF A LIVING CHILD.

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Sudden death of the mother during labor, if the child is living, makes it obligatory upon the attending physician to endeavor to rescue the infant. The success of such an attempt will depend, first, upon the nature of the cause which destroys the life of the mother; second, upon the time chosen for the delivery; and, third, upon the method employed.

Two causes of maternal death are especially fatal to the fœtus. One is traumatism, resulting in severe hemorrhage to the mother, and the other is an infection, producing high fever and profound intoxication. Sudden death in labor from heart-lesions or from mechanical injury, without great hemorrhage, gives conditions most favorable for the survival of the child.

The time for accomplishing delivery in these cases is necessarily brief. A recent case is reported by Hoffman[1] in which in an eclamptic patient he describes the delivery of a living child by abdominal and uterine incision ten minutes after the mother had ceased to breathe. It may scarcely be supposed that a longer delay than this could be borne by the fœtus. Where high temperature is present, the time must be necessarily briefer in which successful delivery may be accomplished.

The method of performing rapid delivery in these cases has been variously chosen by different operators; while abdominal and uterine incision is undoubtedly quickest, some prefer forcible dilatation of the uterus, and forceps or version. The practical choice of a method must depend upon the condition of the birth-canal, and also the circumstances and situation of the patient. Where abundant assistance is at hand, the patient can quickly be put in suitable posture for the forceps or version. Where, however, but little help can be obtained, and the patient cannot be placed in proper position readily, it is often more easy to perform abdominal incision.

The survival of children so delivered will depend upon the vigor of the child, and also upon the nature of the cause which destroyed the mother's life. The acute infections are especially fatal to infants, not only from the action of poisonous germs conveyed from mother to child, but also by reason of the high temperature which is often present in these cases.

A recent case may serve to illustrate the foregoing remarks:

The patient, Mrs. L., aged twenty-six years, a primipara, had been in good health during her pregnancy. She was of good constitution, and had always enjoyed excellent health. A few days before her death she had summoned her physician with the complaint of headache, restlessness, and nervous discomfort. He prescribed a sedative for her which somewhat relieved her symptoms. Shortly afterward, while sitting with her family, she was suddenly seized with convulsions, and soon became unconscious. Her physician was at once summoned, and applied the usual methods of treatment for subduing the eclamptic seizures. These were, however, unsuccessful, and the patient rapidly passed into a comatose condition with extensive œdema of the lungs. I saw her in consultation about six hours after the first attack. She was then in deep coma, with a high temperature and labored breathing. Vaginal examination disclosed the membranes un-

[1] Centralblatt für Gynäkologie, 1895, No. 50.

ruptured, the cervix obliterated, and the os about three-fourths dilated. It seemed to me possible to rupture the membranes, complete dilatation with the hand, and apply forceps, as the vertex was presenting. While hastily preparing the forceps, the patient was seized with a convulsion, at the close of which she expired. I hurriedly asked whether the family desired that an effort be made to save the child, and was informed that such was their wish. As the patient was a large, stout woman, and her bed so placed that she could not be put into position for the use of forceps without considerable difficulty, the quickest method of delivery seemed abdominal incision. Accordingly, while one of the physicians held a light, the abdomen and uterus were rapidly opened, and a male child, weighing 7 pounds and 12 ounces, was extracted. In the hurry of the moment, the patient's temperature had not been taken, but her body felt so hot to the hand that her temperature must have been above 104°. The child was asphyxiated, but speedily revived and breathed naturally. As the child would be without skilled care if left at home, he was immediately warmly wrapped, placed between warmed pillows, and taken to the Jefferson Maternity, where he was placed in an incubator. He was nursed by a healthy young woman whose child was but a few days old, and was given the faithful care of trained nurses. It was observed that the child perspired very freely upon entrance to the Maternity, and that the secretion of urine at first was excessive. The child nursed naturally, its bowels were soon emptied, and its appetite was excellent. It gradually developed, however, symptoms of toxæmia, similar to those of an eclamptic patient. Its urine contained a great excess of uric acid, its skin became dry, and its bowel-movements were dark in color. The child was treated as would be a woman suffering from toxæmia. It derived the greatest comfort from a warm pack. Its intestines were irrigated, and simple diuretics were administered freely. The toxæmic condition considerably improved, and the child continued to nurse regularly. It never had convulsions, and slept when its excretory organs were freely stimulated. At the end of two weeks, however, it developed a purpuric condition of the skin and mucous membrane of the intestine, and died two weeks after delivery from inanition.

This case illustrates very perfectly the pathology of eclampsia, and the toxæmic condition transmitted to the child which proved so fatal to the mother. It was most interesting to observe that all of the child's nervous symptoms, restlessness, and suffering were directly relieved by that form of treatment which increased its excretions. In view of the fact that the child survived two weeks, that it nursed, and was relieved for a considerable time of threatening symptoms, the attempt to save its life seems to have been justifiable. As a post-mortem examination could not be obtained upon mother or child, the exact pathology of both cases could not be ascertained. Every symptom, however, pointed in mother and child to a profound toxæmia as the cause of the fatal issue.

This case illustrates most pointedly the imperative necessity of watching carefully the excretory processes of the pregnant patient. It is not sufficient to ascertain simply the presence or absence of albumin in the urine, but the physician must know that the skin, kidneys, liver, intestines, and lungs of the mother are performing the double duty which the presence of the fœtus entails. When this is carefully watched, sudden and profound intoxications like that described will rarely happen. An experienced observer will detect the effects of toxæmia upon the nervous system, and by suitable diet and prompt stimulation of the organs of excretion will, in the great majority of cases, succeed in averting the danger to mother and child. In the presence of profound toxæmia with eclampsia there is but a short time in which any form of treatment is of the slightest avail. The fatal line is passed so rapidly that, unless the physician is forearmed and forewarned, he may find himself in the presence of an unpreventable catastrophe.

RESULTS OF TREATMENT OF RHEUMATIC FIBROUS ANKYLOSIS BY BRISEMENT FORCÉ.[1]

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IN Foster's *Encyclopædic Medical Dictionary* ankylosis is defined as "any morbid condition of a joint in which its mobility is abolished or decidedly impaired." True ankylosis is bony in nature, while the false is that due to any other cause. There are several varieties of the false, the muscular being due to contraction of the muscles around the articulation, thus preventing free motion; the extracapsular, in which causes outside the joint, such as destruction of tissue and cicatrices, limit the motion, and the fibrous, caused by the development of adventitious fibrous tissue in or around the joint, the more serious cases being those in which it is within the joint.

A clear conception of these different varieties is absolutely necessary for many reasons. By ascertaining, if possible, whether the ankylosis is extra- or intra-articular, we may learn something of the history of the morbid process that produced it, and also be guided as to treatment and in making a prognosis.

In the first place, it is clearly understood that it is essential to determine whether, in a given case

[1] Read before the Orthopædic Section of the New York Academy of Medicine, January 17, 1896.

of ankylosis, the true or false condition exists, and that few will commit the error of the surgeon referred to by Mr. Brodhurst, of treating by extension for fourteen years a case of bony ankylosis in the hope of securing motion, or of the surgeon, Louvrier, who, elated with his great success in treating ankylosis, moved to a larger city and then failed completely, because he could not distinguish between the false and the true. In many cases an anæsthetic is necessary, and it is then seldom difficult to distinguish between the two.

A review of the literature of the subject shows that most of the authorities speak of fibrous ankylosis as synonymous with the false, and use the terms indiscriminately. To the student who desires information as to how to treat a given case, the knowledge to be obtained is most unsatisfactory. Some of the well-known text-books on surgery do not mention the subject at all; others dismiss it with a very few lines, and those that give the subject a chapter, no matter how brief, are not many in number.

Young[1] says "That treatment should not be undertaken until the original articular disease has disappeared or has been overcome by appropriate treatment, since too early manipulation may hasten what the surgeon is trying to overcome. The reduction in mild cases of false ankylosis can be accomplished by gradual manual and elastic traction. In more severe cases, forcible reduction (brisement forcé) may be performed with or without anæsthesia . . . the prognosis is generally good under modern surgical methods."

Bradford and Lovett[2] speak of ankylosis under the head of Etiology of Chronic Joint-disease, but say nothing of the treatment of the fibrous variety due to rheumatism.

Sayre[3] devotes two chapters to the subject and gives full and complete directions as to how brisement forcé should be used, and states clearly what steps should be taken in the after-treatment of the case. He publishes a number of most gratifying results, but says nothing of his failures, and makes no distinction between fibrous and other forms of false ankylosis. His work, however, is the best on the subject.

Ashhurst[4] says that we can improve position by brisement forcé, and that in those cases where we desire to produce mobility passive motion must be employed on the third day, the inference being that the desired result is secured.

The American Text-book of Surgery[5] says: "In the majority of cases a fibrous ankylosis will require for its removal either a forcible rapid breaking up of the adhesions and straightening of the limb, or a slowly effected correction of the deformity by continuous or intermittent traction, etc., but that both at the elbow and at the knee (after fracture of the patella) a resulting fibrous ankylosis, if forcibly broken up, will commonly be quickly reproduced, but with active use of the joint will generally spontaneously disappear in the course of a few months, or at most in a year or two."

Mansell Moullin[1] speaks of brisement forcé, and compares it with the partial and slow method, and gives most excellent advice as to the future management of the case, but is not at all clear as to the results produced.

Schreiber[2] has a most excellent article on ankylosis, but does not state positively what result may be expected after brisement forcé.

When we consider the monographs on the subject of the treatment of fibrous ankylosis, we find that brisement forcé has been recommended by Brodhurst, Bauer, Ollier, Palasciano, Velpeau, Bonnet, Buhring, Dieffenbach, Langenbeck, and many others.

Brodhurst[3] says that he had performed 267 operations for false ankylosis without a bad result, but does not give the details of the cases. He quotes Bauer as saying that he had seen 600 cases of contraction and ankylosis, and thus had most ample opportunity for most thorough clinical observation; and that all were agreed on the superiority of forcible rupture of adhesions as compared with gradual extension, and that the former opponents have been silenced by the overwhelming results which have been produced.

Brodhurst advises gradual extension, with or without tenotomy, or immediate flexion of the limb, with or without tenotomy, and subsequent gradual extension.

I have quoted thus at length to show that with but few exceptions brisement forcé is most highly commended, and yet are the results satisfactory in fibrous ankylosis due to rheumatism is a question that may well be asked. Some recent writers have stated that the adhesions may be reproduced, but not one has come out clearly to show the limits of the procedure. It certainly has its limits, and from a study of the cases here appended it would appear that, except to correct deformity, it is not productive of good results in cases of polyarticular rheumatism. Whether electrolysis will benefit such cases is an interesting subject, and has been carefully studied by Guyer,[4] to whose article the readers are referred,

[1] Young: Orthopædic Surgery.
[2] Orthopædic Surgery.
[3] Orthopædic Surgery and Diseases of the Joints.
[4] International Encyclopædia of Surgery.
[5] Edited by W. W. Keen and J. William White, 1892.

[1] System of Surgery.
[2] General Orthopædics, including Surgical Operations.
[3] St. George's Hospital Reports, 1871.
[4] Annals of Surgery, August, 1893; New York Medical Journal, June, 1895.

as this paper is simply a report of the results of brisement forcé in the treatment of fibrous ankylosis due to rheumatism in the cases the author has personal knowledge of.

Some may argue that most of them were not suitable for the operation, and that a failure might have been expected. My only reply is that practically every text-book on surgery recommends the procedure and says nothing of its limitations or failures, and it seemed justifiable in every instance. In the eleven cases reported, one complete success was achieved, in a case where only the shoulder was involved; one partial success, but it really can hardly be said to be due to brisement forcé, as it was only attempted once, and the subsequent treatment should really be credited with the result. The nine failures were all in cases of multiple fibrous ankylosis, rheumatic in character. Where a slight amount of motion exists at the time of bending the joint there is perhaps a slight hope in some cases of benefit, and in those cases where the adhesions snap, as in a fracture, the prognosis seems better than where they tear. It should be used to correct deformity unless the correction renders the patient's condition really worse, as in Cases V. and VI., where a flexion-deformity of the hip was corrected, and now with the hips fully extended the patient cannot sit down. Of course, it was hoped to have motion, or the limbs would have been left in the flexed position. Where we bend the hips we should, therefore, be careful to place them in such a position that if the ankylosis remains a sitting posture can be assumed; in other words, leave a moderate amount of flexion-deformity. In every case we must be sure that no active disease exists at the time of the operation, and it would seem better if after a failure to secure motion we did not repeat the procedure too soon, but rather rely on massage, electricity, douches, and such measures. The mistake may have been made in some of these cases of moving the joint too freely, but the cases that were only partially moved do not seem to have done any better than those that were moved through the full range of normal joint-motion. Many of the reported cures in literature were undoubtedly in individuals in whom no fibrous adhesions had taken place within the joint, but were cases of extra-articular adhesions or of muscular contractions. In others, however, there is no reason to doubt that true fibrous intra-articular adhesions existed, but in most of these successes only one joint was involved and polyarticular rheumatism is generally more severe in character than the monoarticular variety.

The accidents that may be caused by the use of too much force or by force improperly applied may be serious in character, but in only one of the cases reported do we believe a fracture occurred, and in but one instance was the integument torn. Cases I. and II. were personal, the others were seen at the Hospital for Ruptured and Crippled or in the private practice of Dr. Gibney, through whose courtesy I am enabled to report them.

CASE I.—Female, single, aged twenty-one years. Admitted to Polyclinic Hospital January 26, 1895. Family history negative. Without known cause developed rheumatism in both knees and left elbow eight months previous; was treated in best possible manner in another hospital, both by internal and external medication, and had made a good recovery except that both knees were ankylosed in a straight position. Left knee could be moved voluntarily over an arc of about 10°. No motion in the right. Patellæ movable.

January 29. Under ether-anæsthesia left knee forcibly stretched to full limit of flexion and back to the straight position; much force was required, and tissues within the joint seemed to tear rather than break or snap. The patient was put back to bed, limb firmly bandaged, and cold applications made to the knee. A posterior splint applied to the leg and thigh. Patient suffered much pain and had to be given opiates for three days.

February 6. Any attempts at motion cause great pain. Is again given ether and same procedure repeated. This time the adhesions gave way more easily.

13th. Patient had less pain after the last operation, but cannot stand the pain of attempts to move the knee. There has been no swelling and very little extra heat in the joint as the result of the manipulation under ether.

20th. Under ether the left knee is moved and the right knee moved from the straight line to a fully flexed position, and then after being firmly bandaged is put up in a plaster-of-Paris splint midway between full flexion and extension.

23d. Pain is so great that the plaster has to be removed and limbs put up in a straight position. Massage is applied to the left knee, but is very painful.

No further efforts were made in this case, and when seen two months later both knees were perfectly stiff and fully extended.

CASE II.—Female, married, aged twenty-six years. Family history negative. Three years previous had an attack of inflammatory rheumatism in the left knee and the right wrist. The wrist had completely recovered. The knee was firmly ankylosed within about 10° of full extension; the patella immovable. The joint slightly smaller than that of opposite side. Patient was nervous and much worried at her inability to bend the knee, and as there were no contraindications, under full ether-anæsthesia, on March 14, 1895, the adhesions were broken up and fully extended first and then fully flexed. The foot was elevated and an ice-bag applied to the knee. She suffered much pain after the operation, but at the end of one week could move the knee voluntarily over an arc of 10°.

March 28. Under ether the limb again moved through the full range of extension and flexion and bandage applied and cold applications. Patient had less pain, and in a week was walking around

and moving a limb over an arc of about 15°. She kept trying to move the limb herself, and on several occasions I moved it for her, but could not increase the range of motion, and invariably caused great pain. The case was not seen after July 1st, but at that date there was no further gain in motion.

CASE III.—Female, single, admitted to Hospital for Ruptured and Crippled, November 1, 1892. Family history negative. Exact date of beginning of trouble unknown. On admission she is found to be much deformed. Has a bad lateral curvature; lies on the left side, with the left thigh adducted 45°, flexed to 80°, and rotated inward, thus completely closing the vaginal outlet. There is no motion in the hip; the knee is held flexed at 90°, but has a fair range of motion. The right thigh is abducted about 45° and extended to 120°. She has numerous cicatrices on various parts of the body, due to bedsores. The right foot is in equinus. December 1st, under ether, the left thigh is partially extended and abducted. Much force is required, and a tear in the soft parts results in the region of the left labium and marked venous hemorrhage follows. Shortly after this she developed a severe albuminuria, and no further efforts were made to correct the deformities.

CASE IV.—Female, aged fourteen years, single, admitted to the Hospital for Ruptured and Crippled, May 17, 1894. Family history negative. In 1885 her ankles became swollen, and at the end of four or five months it was noticed that both feet were drawn up, and that the joints of fingers of both hands were also affected. Massage, baths, and internal medication were resorted to and kept up for three years, but with no improvement. She is now unable to walk or stand. Lies on her back, the forearms flexed on the arms, the hips flexed on the pelvis, the knees on the hips. The right shoulder has fair range of motion, the elbow has flexion to 120°, extension to 80°; the wrist has slight motion. The left upper extremity is the same as the right. The first to fourth lumbar vertebræ project markedly and give the appearance of a Pott's disease. The hips are fixed at 130° of extension and permit of 10° of passive motion. The knees are firmly fixed at 90°, and the tibiæ subluxated. Patella fixed. The motion of ankle-joints is limited.

May 20. Has a Billroth splint applied to each knee, and by August 25th the right has been extended to 140°, the left to 135°.

26th. Under ether the knees are forcibly straightened to 180°. On October 3d daily massage is begun and on December 1st passive motion. She can now walk a little. The fibrous adhesions about the finger-joints are less marked.

March 13. Under nitrous oxide anæsthesia the knees are repeatedly and rapidly flexed and extended and then strapped with rubber adhesive plaster. This operation is repeated on October 16th and 23d, and from that time limbs immersed daily in hot water and rubbed. On January 1st, 15th, 29th, February 12th, 26th, and March 12th and 26th nitrous oxide is given and knees moved freely. On June 25th she is discharged; the shoulders and hips are stiff; the knees are movable, the right between 110° and 170°, the left between 100° and 170°; and patient can walk a little better.

CASE V.—Female, aged twenty years, admitted to the Hospital for Ruptured and Crippled, June 10, 1893. Five years prior to this date she had an attack of rheumatism, beginning in the knees and gradually extending to all the other joints of the body. The left shoulder, elbow, and wrist are stiff; the joints of the fingers badly distorted and enlarged; the right hip is extended to 140°, the left to 130°. Slight motion in the right, none in the left. The knees are held at 60° of flexion. Patellæ immovable.

July 14, 1893. Under gas the knees are stretched and plaster of Paris applied.

28th. Left knee fully extended under gas-anæsthesia.

September 1. The left hip fully extended under gas; it comes down with a sharp noise, and it is suspected that a fracture of the surgical neck of the femur has been made, but this cannot be positively made out. Plaster-of-Paris spica applied.

15th. Under gas the right knee forcibly stretched.

29th. Under gas the right knee again stretched.

October 23. Develops pleurisy on left side.

November 26. Massage and galvanism applied daily to the knees.

January 18, 1894. Limbs are thoroughly bandaged, and patient given Fowler's solution in increasing doses.

February 1. A slough appears on posterior aspect of the left leg, due to pressure.

May 10. Rubbed daily with salicylic acid in lanolin-ointment. From that time on various drugs were tried, including salol and protonuclein, but at the present date, January 17, 1896, her knees and hips are both ankylosed in the straight position, and only improvement noted in her condition is that she has a slightly better use of the finger-joints and of the left shoulder, parts which have been under no treatment.

CASE VI.—Female, aged nine years, admitted to Hospital for Ruptured and Crippled, September 28, 1884. In 1884 had inflammatory rheumatism. Both knees, hips, wrists, and finger-joints affected. She has motion over a small arc in all of them. The right hip can be extended to 120°, flexed to 90°. The left hip can be extended to 120°, flexed to 110°. Weights are applied to the limbs, and iodide of potash given internally. She had several attacks of acute rheumatism, and was treated by internal medication, was sent to Saratoga for three months in 1891, and had massage faithfully applied between 1887 and 1892, when, on April 26th, she was given ether, the adductions of the thigh divided, and the fascia lata of both sides and limbs were then put up in a straight position in a plaster-of-Paris spica. Since then she has had massage, and has been gradually gaining a little more motion each year, until to-day, January 19, 1896, she can walk quite well, but has a shuffling gait, and can only go slowly. The right hip can be extended to 180°, flexed to 140°. The left hip can be extended to 180°, flexed to 140°. The knees are straight.

Right has motion between 180° and 150°, and the left between 180° and 140°. She thus has to sit with knees projecting somewhat. The joints of the upper extremity have also improved, and she can dress herself and sew quite nicely.

CASE VI.—Male, aged seventeen years, admitted to Polyclinic Hospital, October 27, 1893. At the age of seven had a fall, injuring the right thigh, and soon after developed rheumatism in that hip. He was confined to bed for a week, and after getting up noticed that the limb was shorter and joint stiff. Two years later had trouble in his left hip. At the age of thirteen had rheumatism in both ankles, and later in both knees. Six months ago had similar attack in the temporo-maxillary articulations. His parents are healthy, but a maternal aunt and two maternal uncles have had rheumatism. He walks on crutches, and the joints of the upper extremity are all normal except the left elbow, which is stiff. Both hips are ankylosed at 110° of extension in moderate adduction, and rotation inward. No motion in the left, very slight amount in the right.

The right knee held firmly at 150°, but can be moved with some force to 90°; fluid in both joints. No grating, patellæ free. Ankles enlarged, motion through half normal arc.

31st. Under ether-anæsthesia (primary) the hips are moved over a small arc, firmly bandaged, and a weight and pulley applied.

November 6. Under ether-anæsthesia (primary) hips further moved.

January 26, 1894. Left knee straightened and hip moved; much force used.

May 9. Knees and hips straightened; has much pain.

July 11. Is having daily massage and hot fomentations. The left hip is in good position. No motion at hip, knee, or ankle. Right hip in moderate abduction, extended to 155°. No motion at any joints of this limb.

A note from the patient in 1895 states that he has no motion in joints of the lower extremity, and as limbs are straight cannot sit down.

CASE VII.—Female, aged twenty-two years, single. Seen November 23, 1889. Family history negative. In July last had an attack of inflammatory rheumatism involving the right elbow and left wrist. Was confined to bed for six weeks. Her elbow is firmly ankylosed at 160° of extension. No swelling. Her wrist held fixed at 150° extension. Attempts to move the wrist cause pain.

November 25. Under chloroform-anæsthesia the wrist is straightened and hyperextended.

December 13. Wrist is straight and has about 5° of motion. Active movements advised and a stimulating liniment.

February 6, 1890. Is given an apparatus to move the elbow.

May 22. Elbow broken up under ether-anæsthesia; joint snapped, no fracture produced, moved freely.

June 10, 14, 19, and July 16. Ether-anæsthesia, and elbow moved freely.

October 30. No motion in elbow. Patient seen three years later. No motion in elbow or wrist.

CASE VIII.—Female, aged twenty-five years, single, admitted to Polyclinic Hospital, December 18, 1887. Seven years ago had inflammatory rheumatism in left wrist, then one joint after another became stiff and to day both shoulders have very limited amount of motion. Elbows have limited range of motion. The wrists have 10° of motion and firmly held, the right in 150° of extension, the left at 170°. The finger-joints are stiff. The right hip firmly ankylosed at 135° extension, with no adduction; the left fixed at same angle with slight adduction. The knees are fixed at 135°, right with tibia rotated outward, the left with tibia normal. The ankles stiff, feet in moderate equinus, toes hyperextended. Is ordered iodide of potash in increasing doses.

October 24. Under ether-anæsthesia all attempts to move right lower extremity failed. Left hip moved in abduction, flexion, and extension over a small arc. Limb firmly bandaged and ice-cap applied to knee.

31st. Left hip brought straight and knee and ankle. Foot put up in good position in plaster of Paris.

November 11. Under ether right knee, hip, and foot straightened. Tendo Achillis divided.

14th. Under ether motion obtained in both hips, firm flannel bandage applied to limb, and over this plaster of Paris.

January 27. Both hips and knees firmly ankylosed. Under ether the adhesions are broken up; patellæ immovable, left tendo Achillis divided.

March 5. Under ether the hips, knees, ankles, and left elbow broken up.

April 17, 1892. Is walking on crutches. All the joints of the lower extremity firmly ankylosed. No motion whatever. Upper extremity same as when first seen. No improvement noted.

CASE IX.—Male, aged thirty-one years. Seen October 1, 1886. Was in good health until September, 1885, when he developed rheumatism in right foot, hand, and wrist, and in left shoulder, knee, and ankle.

October 2. Under ether-anæsthesia the right wrist and ankle broken up, then strapped with adhesive plaster.

November 24. Brisement forcé again done under anæsthesia.

December 21. No motion in joints operated on.

CASE X.—Male, aged twenty-seven years. Seen in 1884. Had been subjected to brisement forcé on right knee at different times by the late Dr. Sands in 1882, and by the late Dr. Roberts in 1884. Knee now perfectly stiff.

CASE XI.—Male, aged forty-four years. Seen in 1885. In May of that year had rheumatism in left shoulder, which was left perfectly stiff.

September 23. Under ether-anæsthesia the shoulder moved freely in every direction. After this hot douches and the Paquelin are applied.

October 23. Under ether the adhesions are again broken up.

November 2. Cannot move the shoulder. Is ordered massage.

February, 1886. Much improved.

June 15, 1887. Result perfect. Can move one shoulder as well as the other.

NEW YORK CITY, 28 WEST FIFTY-NINTH STREET,

ORIGINAL ADDRESS.

A REMARKABLE CASE OF GASTRITIS GRAVIS.

BY TH. ROSENHEIM, M.D.,
OF BERLIN, GERMANY.

Translated from Transactions of the Berlin Medical Society,

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AUGUSTA W., aged fifty-eight years, of healthy family, has had typhus (typhoid, probably) twice and pneumonia three times. She has borne four children, which died early of some brain-trouble and quinsy. For twenty years she has suffered with headache, leading to rheumatic pains, but the stomach has always been healthy. Ten weeks ago, in March, 1893, headache began to be attended with loss of appetite, and later vomiting set in. After two weeks she was so exhausted as to be unable to leave her bed. The pains in the head were localized mostly in the temples and over the brow. They were accompanied by darting pains in the muscles of all the extremities. Occasionally enuresis occurred. Then speech became rather slow and difficult, and for the last four weeks she has suffered with breathlessness and palpitation of the heart. There has been progressive emaciation since the beginning of the trouble. Present condition, May 20th, on admission to the hospital—pale, exhausted, emaciated, of marked bony development, a few ecchymotic spots on the chest; in the most dependent portions of the chest, catarrhal râles. Respiration regular, 24 to the minute; heart normal; pulse 100; knee-jerk present; fibrillary twitchings and slight tremor of the tongue. Blood-examination without significance. In the abdomen a hard resistance is felt about the pylorus, quite tender on pressure. Stomach displaced and dilated; serious motor disturbance. No albumin in urine. Fundus of eyes normal.

May 25. Has vomited repeatedly in the last few days. Constipated. Improvement from administration of bits of ice and sherry. Occasional rise of temperature to 38.6.° Passages firm, scanty, without pathological significance.

June 3. In spite of careful diet and lavage, vomiting has returned. The stomach-contents are odorless, containing no sarcinæ; free hydrochloric acid never present, but the contents are acid and uniformly give the reaction of lactic acid after the usual test-breakfast. Slight febrile movement, with acceleration of pulse, from time to time. Urine free from albumin. Progressive emaciation.

10th. Further examination of the digestive apparatus shows that there is no obstacle in the œsophagus. Stomach dilated; the resistance originally felt has become a tumor about the size of a walnut—that is, hard and slightly painful on pressure, very movable and doubtless connected with the pylorus. Passages from bowels scanty. Stomach-contents lack hydrochloric acid; Uffelmann-test present.

21st. Stomach has been washed out pretty regularly. A subjective improvement has occurred, but the appetite remains poor in spite of medicines, and the weakness increases. Free hydrochloric acid always absent; Uffelmann's test present. Very little nourishment for weeks. The tumor is plainly palpable, as before. Traces of albumin in the urine, without casts. No œdema. In the last fourteen days no febrile movement.

After marked failure of strength the patient died June 26th, the diagnosis having been made of carcinoma of the pylorus.

At the autopsy there were observed great emaciation, bronchitis, slight thickening of the heart-valves, atrophy of the liver, spleen, and kidneys. Intestine and brain normal. No trace of carcinoma of the stomach, and the stomach was given to me for more thorough examination. I found it strongly dilated, the greater oblique diameter being 28 cm., the distance of pylorus from cardia 20 cm. Mucous membrane pale gray. Pylorus penetrable by the finger; walls thicker than normal, 7–9 mm. The thickness was due to an increase in the muscular coat, which in some places measured 6 mm., the normal being 4 mm. Macrosopically, the mucous membrane at the pylorus showed no marked change, but that of the fundus, and especially toward the cardia, was too smooth and thin.

Microscopically there was found:

1. At the pylorus, hypertrophy of the muscularis, with spots of infiltration; vascular walls thickened in the submucosa, muscularis mucosæ partly penetrated by infiltration; the true mucosa shows interstitial growth, to which a compression of the glands is partially due. Normal tubules opening freely on the surface are sparse. Although the nuclei for the most part stain well, almost none of the secretory epithelium shows sharp contours. Some of the tubes are filled with hyaline masses which stain grayish-blue with hæmatoxylin and contain some particles that stain deep blue, the latter being, in some places, arranged along the walls of the tubules.

2. The wall of the fundus is not thickened. The muscularis is beset with infiltrations here and there. In the submucosa are a few hemorrhages. The glands of the submucosa are compressed by the strongly hypertrophied interstitial tissue; only the smaller proportion are atrophied. The secretory epithelium is normal only in places. Its place is taken in part by a pretty diffusely staining mass of nuclei.

3. In the cardiac portion the wall of the organ is thinnest, and the mucosa especially abnormally thin. Glands discharging freely on the surface are absent; the remains of the glands, in spite of vertical sections through the mucous membrane, are cut obliquely and lie deeply and crowded together. The epithelium of the glands is changed in the same way as in the fundus.

There is no macroscopical abnormality of the intestine. Its secretory and resorbtive function was scarcely altered according to clinical observations. The microscopical examination of the tissues supported this view. At the autopsy there was shown to be carcinoma of the pylorus, which was of normal calibre. Except bronchitis and marked emaciation, there was nothing but atrophy of the great abdominal glands. The more careful examination of the stomach showed only a considerable benign hypertrophy of the pylorus muscle and a severe chronic gastritis tending to atrophy, which

could be considered as of pretty high grade in the fundus near the cardia.

Can the findings of the autopsy in the stomach explain the clinical picture and death? I believe we may answer this question in the affirmative, although total atrophy was not present. We know that gastric atrophy is not a rare occurrence. Quite apart from atrophic changes which accompany carcinoma, this form of gastritis can be established as an independent disease. As such, it is rather frequent in elderly persons, particularly old women (Ewald); but it is occasionally noticed in quite young persons, as in the following case that I have had under observation for years:

Fred. B., thirteen years old, presented himself in 1889, complaining of gastric oppression and pain. Vomiting had been frequent of late and the pains were cramp-like. The appetite and the condition of the bowels were normal. He was a small, well-built, well-nourished boy, with a healthy complexion. Almost all of the back teeth and several of the front ones were lacking. There was a grayish-white coat on the tongue. Gastric area tender on pressure. About 30 c.c. of the test-breakfast were removed and appeared as if they had been chewed and spit into the glass directly. Reaction neutral, no peptone. The scanty filtrate, after the addition of hydrochloric acid, showed a delay in the solution of fibrin up to four hours. No marked motor trouble. The patient was frequently examined in the next eight months, the results not being especially significant. Codeine, pancreatin, and lavage ameliorated the symptoms, but there has been no change in the secretory activity of the stomach, as shown by an examination that I made in July, 1894. The dental defect was undoubtedly the cause of the severe gastritis passing into glandular atrophy.

That atrophy of the mucous membrane of the stomach is a grave affection, sufficient alone to cause death, is proved by the researches of Fenwick, Nothnagel, Quincke, Ewald, Rosenheim, and others. In some of the observations contributed up to date the affection has presented the picture of a progressive anæmia. (Nothnagel, Quincke, Henry and Osler, Rosenheim.) At times symptoms have appeared indicating degenerative processes in the cord—paresis, muscular spasm, atrophy, loss of patellar reflex, etc. Eisenlohr found in his case of atrophy of the gastric and intestinal mucous membrane that ran its course with the above-mentioned symptoms, the signs of grave anæmia, degeneration of the lateral and posterior columns. With our patient, Augusta W., the anæmia was only of such character as would be expected in any cachexia. Nervous symptoms, except headache, enuresis, palpitation of the heart, etc., which could be explained by the weakness, were absent. In the foreground were the loss of appetite and vomiting, without especial complaint of pain, and these symptoms could be explained solely by the gastritis, leading to atrophy. The gastric symptoms of this malady are very diverse. Pains, especially cramps, are present in part of the cases, vomiting is quite frequently lacking; the most frequent symptom is complete loss of appetite. Vomiting, in our patient, may well be ascribed to the dilatation that developed in the dislocated organ. Lavage might mitigate this symptom temporarily, but the motor function did not improve under this treatment, so that stagnation and consecutive vomiting always returned. Even if the ingestion of nourishment was limited essentially by the anorexia, only a fraction of what little was taken was utilized. Granting that assimilation remained normal—the feces were always formed and presented no abnormality—the small quantity of nourishment that reached the secretion could not possibly maintain the balance of nutrition. The rapid emaciation shows how seriously the economy was injured. It is clear that, in spite of loss of appetite, such a failure of strength would not have taken place if all that reached the stomach was really utilized. The critical point of the situation lies, therefore, in the disturbance of the motor function of the stomach. In none of the cases thus far published is the weight of this factor so plainly shown as in ours. We know that when the gastric secretion fails a compensatory activity may devolve upon the intestine, and, as long as the latter organ remains healthy, the general nutrition is good and patients may survive for years without losing the appearance of health. But the situation changes as soon as the food, which is not altered in nor absorbed from the stomach, remains there as the result of damage to the motor function. Herein is the importance of a dislocation of the stomach, which is so common in women, and which doubtless favors the development of atony and dilatation. As the motor weakness makes itself felt the organism seeks to compensate for the disturbance by hypertrophy of the musculature and certainly succeeds for a time; but the hypertrophied muscle, after years it may be, becomes insufficient, and then begin the symptoms of disease. The weakness of the muscular apparatus is not explicable by the pathological changes found therein. The slight interstitial hyperplasia indicates only that mild inflammatory processes have occurred, but we cannot see how they have influenced the motor activity of the organ. At last, for every hypertrophied muscle, whether of the heart or stomach, comes a time of failure, and this condition is capable of improvement only temporarily, if at all. The rapid course in our case is most remarkable, the duration from the first marked symptom till death being scarcely six months. Nothing, however, would be more erroneous than to suppose that the whole pathological process in the stomach occupied only so short a time. That atrophic processes in the gastric mucosa may develop with extraordinary rapidity, is shown by similar changes that we note as accompaniments of carcinoma; but in the vast majority of idiopathic atrophies the development and course are extremely chronic. The inflammatory process here occupied a long time, and the first complaints coincided with the failure of motor power. The considerable febrile disturbance, for which a cause could not be found, does not contradict the diagnosis of gastric cancer, since it is not rarely observed in that condition.

Among the signs of disease which were afforded by the stomach, the tumor remains to be explained. It was felt by all the examiners—its position, hardness, respiratory movements, and movability under the hand—all these signs, taken in connection with the other symptoms, left no doubt that we had to deal with a malignant neoplasm at the pylorus. Even a gradual enlargement was noticed, the easier and more exact palpability of the swelling, on account of the progressive emacia-

tion, being deceptive. All points of diagnosis always led us to the opinion of cancer. That form of disease known as cirrhosis, as well as the anomaly described as hypertrophic stenosis, was pretty unanimously excluded, on the ground that the course of the disease lacked chronicity. There was nothing to indicate a foreign body in the stomach; a peritoneal exudate was excluded by the extraordinary mobility and the slight tenderness of the tumor. There was nothing to justify the belief that there was an infiltration of the gastric wall at the base of an ulcer.

There is no doubt that hypertrophy of the pyloric muscle may simulate a neoplasm. Leube expressly states that swelling due to hypertrophy cannot be distinguished from a smooth and small pyloric carcinoma; that consecutive dilatation of the stomach and chronic gastritis are common to both. He bases his differential diagnosis on the origin of the condition and the exclusion of a cancerous cachexia, but our patient left us in the lurch so far as these points of differentiation were concerned.

Finally, when we consider the constant lack of free hydrochloric acid and the persistence of lactic acid in the gastric contents, the diagnosis of cancer seemed to be well founded. According to J. Boas, the distinction of such processes as we have here considered, from carcinoma, must depend on the positive occurrence of the ferric-chloride test, which is pathognomonic of cancer, since "lactic-acid production is a specific sign of gastric carcinoma." Boas has been the first to show the relation between gastric cancer and the lactic-acid reaction, but he goes too far in estimating the value of his discovery. It is doubtless true that, in the great majority of cases in which a distinct ferric-chloride test is obtained, there is gastric carcinoma. Exceptionally, Uffelmann's test can occur in other pathological conditions, as our experience teaches. If the reaction occurs in the filtrate of the gastric juice, removed at the height of digestion, after a test-breakfast, and occurs sharply—that is, shows a yellowish-green tint—it is significant as indicating positively that the lactic acid amounts to at least 5 : 1000, and such a finding is always pathological. On the other hand, the positive occurrence of the reaction in the ethereal extract is without diagnostic significance, since the slight traces of lactic acid that are necessary to render this possible are often found normally. Especially is this true when the test is carried on according to Fleischer's method, shaking the ether with the reagent and letting them settle. Even such traces as may be present in white bread or in Knorr's oatmeal are recognized by Fleischer's method. Boas has, therefore, further directed to give the oatmeal-gruel after washing out the stomach, and to apply the test for lactic acid according to his aldehyde method. This method was published after the death of our patient, and there were at that time no other methods to render possible a decisive test. From my control-experiments I can say positively that Boas's reaction, quite apart from its complexity, never succeeds where a marked Uffelmann-test does not occur. We have seen that the treatment by lavage was not sufficient to correct the motor weakness of the stomach. According to my experience, in the treatment of atony and dilatation of the stomach, the employment of electricity can scarcely supply the needed contractile energy. Nevertheless, in individual cases, the attempt ought to be made with intraventricular galvanism or faradism; but even when the weak organ shows itself incapable of forcing along the ingesta our armamentarium is not exhausted, and we can still appeal to surgery. Gastroenterostomy, performed by a skilful hand, is a safe operation, unless the loss of strength has proceeded too far. Of our last nine gastric patients on whom Dr. Hahn has operated, not one has succumbed, and the requisite functional compensation has been obtained. The stagnation has disappeared, and even the exhausted muscular wall is still strong enough to drive the ingesta through the hole in the deepest portion of the fundus into the intestine. Donin has lately again called attention to the favorable functional results of this operation in the case of ulcerative contraction of the pylorus, and I can cite similar life-saving results from my own experience. In my opinion, an anatomical obstacle is not necessary to justify operation. The salient point is the motor failure entirely apart from its origin. If it cannot be restored by medical treatment in a reasonable time, the case belongs to the surgical clinic. Exploratory cœliotomy is quite insignificant, and, after local inspection, a decision can be made as to the best plan to pursue. Considering the chances that an operation would have given in our case, we must admit that a gastro-enterostomy, undertaken at the right time, would probably have saved the patient's life. In a case of Westphalin's, similar to ours—that is, without constriction of the pylorus—gastro-enterostomy was done. The patient died on the fourth day, but the interference was made too late. Besides, there was well-advanced phthisis. The bad result in such cases is often due to the misapprehension that operation is a last resort, so that surgical interference is too long delayed.

CLINICAL MEMORANDUM.

APPENDICEAL ABSCESS OPENED THROUGH THE VAGINA.

By P. GUNTERMANN, M.D.,
of Louisville, Ky.

On September 4, 1895, I was called to see a young woman, aged thirty years, the mother of two children. Both labors were normal, both children living and healthy. The patient stated that she had never been ill in her life. She was small and wiry-looking, and gave evidence of perfect health.

The history is that on the second day of September she was taken with acute pain in the right iliac region. She is a woman that bears pain remarkably well. She did not at first think that the attack amounted to very much, but at night she was compelled to go to bed. She took some of the ordinary household remedies—paregoric, whiskey, etc.—which gave no relief. Some time during that night a neighboring physician was called, who prescribed, and the next day saw the patient twice. The pain at no time abated.

I was asked to see the case on September 4th, the third day of her illness, and found her suffering with intense iliac pain, vomiting, and purging. Her temperature at that time was 105° F., pulse 130, with a cold, clammy perspiration. There was some resistance in the right iliac region, much more than was present in the left.

After due consideration, I concluded that it was a case of appendicitis, and one which demanded prompt surgical interference. I sent for my friend, Dr. W. H. Wathen. We went together to see the patient in the morning about six o'clock, and found her then in profound shock. As soon as possible we secured the ambulance and brought her to the Infirmary. Under the influence of hypodermatic injections of morphine, etc., she rallied. She was, of course, not in condition to be operated upon that day, and, strange to say, in the evening her temperature went down, the pulse became less frequent, and the next morning she was feverless, and had nearly a normal pulse. Pain in the iliac region had very much subsided, but she had constant crawling pains throughout the abdomen. She had more or less diarrhœa all the time, three or four passages a day, preceded by some pain and followed by excessive pain. She went on in this way without fever—temperature 98½° to 99° F., pulse 70 to 80—for ten days.

On September 15th I saw her about noon, and noticed a strangely changed appearance in her features as soon as I entered the room. Her expression bore evidences of intense suffering; her extremities were cold; a cold, clammy perspiration was present over the surface of her body; pulse 130; temperature 101° F. I went at once for Dr. Wathen, as the case presented a very serious aspect. Previous vaginal examinations had been made, revealing no trouble about the vagina, womb, or pelvis; but upon this occasion, when Dr. Wathen introduced his finger into the vagina, an immense tumor was discovered, and it was then decided to operate upon her either that night or the following morning. Operation was performed the next morning by the vagina. There was a very large abscess found after making an incision behind the uterus, which discharged about a quart of fluid—so-called laudable pus. It was not very offensive at first, but directly it became fecal in odor, and some fecal matter was also discharged. This abscess was thoroughly evacuated and irrigated with bichloride solution; the opening was made very large, a tube was introduced, gauze inserted, and the patient put to bed. The operation was borne very well, and after the patient was put in bed the pulse came down to 90, temperature to about normal the same day. The following two days considerable fecal matter was discharged through the drainage-tube. On the third day Dr. Wathen removed part of the dressing, no fecal matter being found; the drainage-tube was caught in the adhesions or new plastic formations that filled the cavity, and two days afterward the balance of the gauze was removed, there being no discharge, but the drainage-tube was left *in situ*, where it still remains, the discharge through it, however, being insignificant, amounting, perhaps, to a tablespoonful in the twenty-four hours.

I diagnosed the case as one of appendicitis from the beginning, and subsequent results have proved that it was appendicitis with the formation of a retroperitoneal abscess which had to be opened by the vagina. This feature is something new to me, and I believe it is also to Dr. Wathen. There can be no doubt that it was a case of appendicitis. The operation was performed less than two weeks ago, and the patient has done remarkably well. She has been sitting up for two days, and says she feels almost well enough to be taken home.

MEDICAL PROGRESS.

Remarkable Persistence of Diphtheria-bacilli in Nasal Mucus.—At a recent meeting of the Société Médicale des Hôpitaux, LEGENDRE and POCHON (*Progrès Médical*, 1895, No. 52, p. 459) reported the case of a child that had been under observation for fifteen months, during which it was affected three times with diphtheria (once angina, once stomatitis and rhinitis, once rhinitis and angina). Bacteriological examination made methodically on thirteen different occasions demonstrated the presence of diphtheria-bacilli, sometimes virulent, sometimes not, varying in form and size, and sometimes alone and sometimes associated with staphylococci. The organisms would disappear upon antiseptic irrigation, but would reappear when this was withheld. The case illustrates the condition of latent microbism.

The Influence of Nuclein-containing Food upon Uric-acid Formation.—As the result of a clinico-physiologic investigation, UMBER (*Zeitsch. für klinische Medicin*, Band xxix. Heft 1 and 2, p. 174) has determined that the daily ingestion of 500 grammes of thymus is attended with a distinct increase in the elimination of uric acid, as compared with the daily use of 500 grammes of muscular tissue. The daily ingestion of 300 grammes of thymus, however, increases but slightly such elimination. The daily ingestion of 500 grammes of liver induces varying degrees of increase in the excretion of uric acid, while the ingestion of the kidneys and the brain of the calf brings about changes in the elimination of uric acid comparable with those following the use of muscular tissue. When there is a preponderance of milk in the diet the excretion of uric acid is less than upon meat-diet. The amount of xanthin-bases excreted in health varies widely. It is increased by the ingestion of alkalies and also by the use of a milk-diet.

The Coagulation of the Blood and the Salts of Lime.—As the result of an experimental investigation, ARTHUS (*Archives de Physiologie*, 1896, No. 1, p. 47) has determined that all of the salts (oxalates, fluorides, soaps) that possess the property of precipitating the salts of calcium from their solutions possess, in quantities in which they are not decalcifying, also the property of rendering the blood not coagulable spontaneously. When to blood-plasma containing oxalates in the proportion of 1 to 1000 are added several parts of magnesium chloride (which does not cause any precipitation of the dissolved oxalates) the coagulation of the plasma may be effected by very small quantities of calcic salts—quantities insufficient to precipitate the dissolved oxalates. It thus appears that the coagulation of the fibrin may take place in the presence of a large excess of oxalates, provided that by a suitable method a small quantity of the salts of calcium is maintained in solution and free. When the excess of oxalates is removed by dialysis from the plasma coagulation may not take place, although a sufficient amount of sodium chloride is present to insure the precipitation of the fibrin. These facts go to show that blood containing oxalates in solution is not coagulable spontaneously because it is decalcified and not because it contains oxalates. It thus results that the presence of the salts of calcium in solution in the blood is a necessary condition of coagulation.

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SATURDAY, FEBRUARY 1, 1896.

CORPORAL PUNISHMENT IN INSTITUTIONS.

MR. DUDLEY WARNER, a strong advocate of corporal punishment in reformatories, characterizes those who oppose cruel disciplinary methods in public institutions as suffering from "*moral mushiness.*" The report of cruelties practised upon the inmates of the "Westchester Temporary Home for Destitute Children," at White Plains, N. Y., by the State Board of Charities would seem to prove that there are some people in Westchester of Mr. Warner's way of thinking. Here is a charity having a large Board of Managers, who are the most respectable ladies in that county, in which the method of punishing children who have attempted to escape is to chain the legs together at the ankles and compel them to wear the chain day and night for months. In one case the child wore a chain, weighing three pounds, seven months continuously. The chain was fastened on each ankle by padlocks and with such slight protection of the skin that a callous ring had formed around the ankles. The State Board of Charities, we believe, expressed the better sentiment of the people of that county in the declaration:

"That whatever may be said in favor of or against corporal punishment by whipping of children in families or in common schools, its tolerence in corporate and private institutions, without its natural restraints of parental instincts in the family, and of public criticism in the common school, is a tolerance that cannot be divorced from an evitable tendency to abuse; and further, that once admitted as an exceptional or extraordinary remedy, its use inevitably extends, until it becomes the chief reliance for enforcing discipline, and that familiarity with this form of correction leads to cruelty, brutality, and inhumanity, and is pernicious in its influence on both officers and inmates, and in the end detrimental to discipline."

It is gratifying to notice, also, that the Board not only condemned these cruel methods in general, but instructed its Secretary

"to forthwith notify the managers of the Westchester Temporary Home for Children, in writing, that the use of chains upon the children in its custody for punishment or restraint must at once be stopped and that corporal punishment upon such children must be abandoned, and that upon failure to comply with this instruction this Board will issue its mandate under the Constitution and the statutes, and proceed to enforce the same."

PREFERENCE OF THE DIPHTHERIA-BACILLUS FOR THE TONSIL.

IT has long been a somewhat puzzling problem to clinicians just why the tonsil is almost universally the point of attack in diphtheria. Its peculiarly exposed position at the junction of the food- and air-passages, and liability to infection from both sources, are possibly responsible for part of this, but certainly not for such a strikingly "bad eminence" as it possesses in this respect. For it obviously is not half as liable to air infection as the turbinated bodies, or to food infection as the mouth or the stomach, being merely brushed by the food in its passage from one to the other, and yet it is at least five times as frequently the site of attack as either. Another theory is that being a rudimentary organ, or lymphoid aggregation around the mouth at the second bronchial cleft, it is a *locus minoræ resistentiæ*, and hence specially vulnerable; but any such "historic" weakness as this would certainly be more than overbalanced by the fact that the mass has been secondarily developed into a leucocyte-breeder and sanitary-police-barracks for the entire upper alimentary canal, so that for a germ to choose this as a breeding place would be like a burglar attempting to rob a police-station, if this be the only factor.

An interesting light has been thrown upon the problem by the methods adopted in cultivating the Klebs-Loeffler bacillus for the manufacture of Behr-

ing's antitoxin. After starting a culture upon its nutrient medium, it was found that the production of the toxin went on quite rapidly at first, but in a very short time began to diminish and finally almost ceased. If, however, the air in the flask above the culture was now renewed, the production began again at once, so that by constantly changing the air the production continued unchecked, while by passing a rapid, constant current of air through the flask it was formed three or four times as rapidly as before. An essential part of the perfected routine now is the maintenance of a rapid current of air (sterilized) through the flasks containing the culture-media by means of a hydrostatic vacuum-apparatus, by which the requisite degree of virulence in the culture can be developed in about one-fourth of the time required under the old "dead-air" method. Evidently the bacillus flourishes best not only in the presence of oxygen, but in a current of air. And where in the entire alimentary canal can this requisite be met except upon the back part of the inner surface of the tonsil? Which is precisely the point of attack in 80 per cent. of our cases. It seems to be pretty clearly established that diphtheria almost invariably enters the system through the alimentary canal, either in the food or drink, or by labial contact, and the comparative immunity of the mucosa of both mouth and stomach from attack has been a matter of surprise, for which, however, the absence of an air-current in these situations gives, at least, a plausible explanation. The mouth is, of course, frequently attacked, and the stomach in rare instances, but both almost always secondarily, after the germ has gained a vigorous foothold upon the ventilated surface of the tonsil. This demand of the germ also helps to explain its marked tendency to extend along the air-passages rather than the alimentary tube, and also the fact that its most vigorous and virulent growth occurs at the point where the air-current is most rapid, the interior of the larynx, the trachea, and especially upon the vocal cords. The extreme virulence and high death-rate from systemic poisoning and heart-failure of diphtheria of the nasal passages are also more easily understood. May not the special liability of the nerves of the palate-muscles in general, and azygos uvulæ in particular, to peripheral neuritis and paralysis after diphtheria, be partially due to their nearness on both aspects to surfaces swept by a current of air and hence peculiarly suited to the development of a virulent form of the toxins?

Fortunately, however, the tonsil is, to use a Hibernicism, not only the most vulnerable, but one of the best protected places in the body. For every dart nature seems to have a shield. And in this case the shield consists of the swarms of leucocytes poured forth by the gland. They cannot defeat the enemy in a fair fight upon a field of his own choosing, for they are sappers and miners rather than riflemen, but they bravely bar his way into the heart of the country by a solid rampart of rank upon rank of their dead bodies. This is the famous and much-maligned "membrane," which happily in a large majority of cases is successful in mechanically cutting off the Klebs-Loeffler pirate from the base of supplies which he hoped to establish in the rich inland districts. When his forces have become enfeebled by starvation, the membrane craftily detaches itself and sweeps the invading army down with it into the war-like gastric districts, where the leucocytes have all the advantages of the situation; can massacre the bacilli at their leisure and eat them afterward.

This again coincides with the clinical observation—that so long as the membranes are well developed and *confined to the tonsils*, the constitutional symptoms are usually few and mild, and reinforces the *old* teachings as to the danger of forcibly detaching the membranes, and the *modern* ones as to the harmfulness of too frequent swabbings. It also fits in with the fact that many of the most rapidly-fatal cases are attended by the formation of very little membrane, or of only a thin pellicle, as is usually the case in nasal diphtheria, where both the fixed cells and leucocytes seem simply overwhelmed by the virulence and rapid production of the toxins before they have time to form a membrane.

Nature is wonderfully skilful in guarding her weak points, and although, as the little girl remarked of boils, "there's no *real good* place to have them," yet if we may be allowed so to express ourselves, if we *must* have diphtheria, there is probably no safer place to have it attack the internal surface of the body than the tonsil.

ECHOES AND NEWS.

THE State Senate's Cities Committee is considering the proper location for a hospital for the exclusive use of scarlet-fever cases in New York City. One hundred thousand dollars have been subscribed toward its erection by private individuals.

THE late Mrs. A. R. Aspinwall leaves her whole estate, valued at three millions, to the Hospital of the Protestant Episcopal Church of Philadelphia. The will is liable to be contested by her niece.

THE oldest medical recipe, according to a French medical journal, is that of a hair-tonic for an Egyptian queen. It is dated 4000 B. C., and directs that dogs' paws and asses' hoofs be boiled with dates, in oil.

AN unfortunate altercation is reported to have arisen between the Post Surgeon at Jefferson Barracks, Mo., and his assistant. The court-martial has sentenced the latter to suspension from rank and confinement to post-limits for three months.

THE usual complaint is that the ambulance-surgeon does too little too late, but in the recent case of Babcock, the Harlem Hospital seems to have promoted a young doctor who did too much too soon. Every complaint against the ambulance-service could easily be overcome by a little wholesome discipline.

AT the annual meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital the following officers were re-elected for the ensuing year: President, Dr. D. B. St. John Roosa; Vice-President, Dr. Andrew H. Smith; Treasurer, Dr. Bache Emmet; Secretary, James L. Skillin.

DR. ELIZA M. MOSHER, of Brooklyn, was recently appointed Woman's Dean and Professor of Hygiene of the Literary Department of the University of Michigan, at Ann Arbor. She has long been a prominent member of the profession, and is now Vice-President of the Pathological Society of Brooklyn.

THE experiment of bicycle-wheels for the Brooklyn ambulances is being put to practical test. Although each wheel represents a cost of fifty dollars, the saving in the item of repair, it is thought, will more than offset this, to say nothing of the increased comfort, and perhaps diminished mortality of the patients.

AN amendment to the Sanitary Code of New York City was recently passed and will go into effect in about a week, requiring all milk-dealers, both wholesale and retail, to provide themselves with a licence. To obtain this they must give the Health Board evidence that their business is conducted strictly in accordance with their rules regulating the milk-supply.

DR. HUNTER MCGUIRE, of Richmond, Va., who is an honorary member of the State Medical Societies of Virginia, West Virginia, and North Carolina, offers a prize of one hundred dollars to be awarded at the next meeting of the Virginia Medical Society in October, 1896, for the most successful essay on "The Status of Serum-therapy." Competition is restricted to members of the societies mentioned.

THERE are 1500 registered physicians in the State of North Carolina, each of whom pays a State tax or licence-fee of $10 per annum; 465, or about one-third, are members of the State Medical Society. The next Legislature will be asked to appropriate the amount of this tax, $15,000, to the establishment of a State vaccine-farm, with provision also for the cultivation of diphtheria-antitoxin.

DR. EDWARD WIGGLESWORTH, of Boston, died there January 20, 1896. He was born in Boston in 1840, and was graduated from the Harvard Medical School in 1865. He served in the Medical Department of the Army for two years during the Civil War. Dr. Wigglesworth spent five years in Europe studying skin-diseases. He founded the Boston Dispensary for Skin Diseases in 1872.

AT an expense of $35,000 for text-books relating to the evils of alcohol and tobacco, the public schools of New York City are prepared to begin the course of forty lessons prescribed by the "Ainsworth Law," which passed the Legislature last year. This Act, which has been contemptuously called the "Jag" Bill, has been the subject of much ridicule, and efforts are now afoot for its early repeal.

AT the annual meeting of the New York County Medical Association, held Monday evening, January 20, 1896, the following officers were elected: President, Dr. Joseph E. Janvrin; Vice-President, Dr. Herman J. Boldt; Recording Secretary, Dr. P. Brynberg Porter; Corresponding and Statistical Secretary, Dr. Nathan Gross Bozeman; Treasurer, Dr. John H. Hinton; Member of the Executive Committee (to serve for four years), Dr. John Shrady.

DR. CASSANOVA, of Bourges, calls attention to the dangerous qualities of cotton-flannel, an article in constant use, especially in the apparel of women and children, and cites three recent cases occurring in his practice in support of his observation as to the highly inflammable nature of this fabric. It is not easily ignited by contact with a live coal, but the blaze of a match or lamp will cause it to flash like gunpowder. His warning in this matter is very timely and important.

A CONCENTRATED antitoxin has been produced by the New York Board of Health. Whereas the serum prepared by Behring and designated by him as Nos. 1, 2, and 3, contained respectively 60, 100, and 150 antitoxin-units per cubic centimetre, the Department is now ready to dispense what it will indicate as No. 4, with a strength of 200 antitoxin-units to the cubic centimetre, No. 5 representing 300, and No. 6, 400. In using these it will be necessary, of course, to reduce the dosage in accordance with the increased potency of the new products.

DR. MARMOREK, a young Viennese physician, after four years of research, has been rewarded by the discovery of a healing-serum to be used against erysipelas and other infectious inflammations of the connective tissue, and also in puerperal fever. It is a product of the streptococcus and is produced like antitoxin. In the hands of the profession of Paris it has given rather promising results. Dr. Chantemesse has tested its efficacy in 500 cases of erysipelas, in which the mortality was 2.59 per cent., while 500 other cases treated by the other approved methods of the present day gave a mortality of 3.79 per cent.

A WELL-KNOWN Philadelphia physician, whose name need not be mentioned for obvious reasons, is in a fair way greatly to increase his already large income through a discovery which he claims to have recently made. The

doctor comes of good old stock, and is quite a figure in Philadelphia's most exclusive society. His discovery, brought about by experiments made upon his own person, is nothing less than the existence of a distinct and separate corpuscle of blue blood. When the result of his researches gets noised about the doctor will doubtless be overrun by Sons of the Revolution, Colonial Dames, and members of other similar patriotic organizations in which ancestry is necessary. In the near future we may expect to hear: "I say, old chap, come take a peep through my microscope and see my blue blood-corpuscle."—*Philadelphia Record.*

THE State Commission in Lunacy has appointed Dr. Ira Van Gieson, of New York, to the position of Director of the Pathological Institute of the State Hospitals for the Insane, which has recently been established. Dr. Van Gieson was selected after a special competitive civil-service examination, which embraced a series of questions in general pathology, minute and pathological anatomy of the nervous system, technique and methods of neural investigation, and the lines of research to be applied to the study of the pathology of insanity. The laboratory, which is to be maintained for the benefit of all the State hospitals, will be conducted on a scale which has not hitherto been undertaken by any State or country, the aim of the commission being to provide for an exhaustive study of all the morbid conditions that underlie mental diseases from the standpoint of cellular biology, which is now elevated to the dignity of a special science; also to provide instruction in brain-pathology and allied subjects for the medical officers of State hospitals. Official bulletins representing the progress of the laboratory and clinical work of the State hospitals will be issued quarterly.

THE MEDICAL NEWS is glad to bring to the notice of its readers the following appeal for the perpetuation of the memory of one of America's greatest scientists:

The Leidy Memorial Fellowship in Anatomy.

It has seemed unjust to many that there is no suitable memorial to perpetuate the name of Joseph Leidy, the great scientist and teacher. A committee has therefore been organized from among his old students to raise whatever money may be necessary for the accomplishment of this object.

There is no idea more suitable, no testimonial more practical, or none which would appeal more to the judgment of the great investigator himself, than the establishment of a Fellowship in Anatomy, the great division of medicine which he loved so well. As the University of Pennsylvania was the scene of the greater part of his labors, the committee has thought it best to establish the Fellowship in that institution.

The creation of the Fellowship will not only perpetuate the name of Leidy, but will enable some practical working anatomist to carry on original work in the University, and to utilize the vast collection of material which is deposited in the Wistar Museum.

Thirty thousand dollars will put such a Fellowship on a permanent working basis, it being intended that the income from this sum should be paid to the Fellow, thus enabling him to pursue his studies with the assurance that his daily wants will be provided for. We appeal to you, therefore, as lovers and admirers of the gentle, humane scientist, whose achievements have made his name familiar on two continents, to aid us by subscribing to this fund.

The movement is a general one, and if you desire further information in regard to the purposes of this memorial, and the regulations which will govern it, we will be glad to communicate with you.

Communications and remittances should be addressed to the Secretary and Treasurer.

DR. J. HOWE ADAMS,
1523 Locust Street,
PHILADELPHIA.

THERE has been in Duluth an epidemic of about 1000 cases of typhoid fever, with 30 deaths, caused, it is believed, by the infection of the water. An inquiry disclosed the facts that the intake of the water company in the adjoining great lake was only 359 feet from the shore, was in a filthy condition, and was situated about 800 feet from the mouth of a large sewer. It appears that the superintendent himself has for a year or two procured water for his family from a spring several miles from Duluth. The city now compels the company to supply spring-water to consumers without additional cost. The supply is said to be abundant and the quality of the water pure and excellent.

DRS. BIGGS and PRUDEN have made to the New York City Board of Health the following report and recommendations, which were adopted at the last meeting:

"It has been for a long time well known that the expectoration of persons suffering from laryngeal or pulmonary tuberculosis (consumption), pneumonia, influenza or la grippe, and from diphtheria, contains the specific germs of those different diseases, and is capable of inducing those diseases in others.

"There is, furthermore, much evidence that a similar condition exists in certain more readily communicable diseases, such as scarlet fever, measles, and whooping-cough.

"In regard to some of these affections, the danger from the expectoration in public places is, of course, small, as the patients are ordinarily confined to their homes during the infectious period. But this is not universally the case. It has long since been shown that the chief means for the transmission of consumption is the dried and pulverized sputum of persons suffering from this disease.

"Diphtheria, influenza, and grip are also easily communicated in this way during certain stages of the disease. Catarrhal affections may also be communicated through dry spittle mixed with dust.

"These germs are liable to be gathered on the feet and on the skirts of women and taken into private houses, where the most perfect ventilation will not stay their effect.

"We believe that the time has now arrived when the people of the city of New York will heartily support the adoption of such sanitary measures as may seem necessary and expedient for the abatement of this widespread nuisance and source of danger.

"We would recommend the following resolutions:

"*Resolved*, That notices be posted in all public places and in all surface and elevated cars in this city, signed by the Board of Health, warning passengers against ex-

pectoration upon the floors of these conveyances; and, further, that similar notices be posted in the stations of the elevated roads, warning against expectoration upon the platforms and stairs or on the floors of the stations.

"*Resolved*, That similar notices be posted in the halls and assembly-rooms of all municipal and Federal buildings in the city.

"*Resolved*, That the municipal authorities be requested to provide sufficient and proper receptacles for expectoration in such public places as are in their control, and that the managers of the elevated roads be requested to provide similar receptacles sufficient in number for their stations and platforms, and that in all cases these receptacles shall be kept in a cleanly condition.

"*Resolved*, That the officers of the Manhattan Elevated Road be requested to give peremptory orders to their guards to restrain from and to prevent, so far as possible, expectoration from trains into the streets, and to secure the inforcement of these orders."

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, January 7, 1896.

EDWARD D. FISHER, M.D., PRESIDENT, IN THE CHAIR.

PROGRESSIVE MUSCULAR ATROPHY.

DR. G. M. HAMMOND reported a case of progressive muscular atrophy beginning in the facial muscles. He said that many such cases were looked upon with suspicion, but in this instance the history was so clear that he felt the diagnosis was correct. The photograph exhibited had been taken about one year ago. The patient was a middle-aged woman, who at one time was exceedingly vigorous and muscular, and weighed one hundred and eighty pounds. She weighed over one hundred and sixty pounds prior to the advent of this disorder. The family history was excellent, there being no nervous disorder of a serious nature. Fourteen years ago, while a nurse, she had contracted some skin-disease which had resulted in the development of a number of abscesses. About two years ago she began to notice a hollowing of the left cheek and temple, and this had increased until at the present time the atrophy was very marked. The next thing noticed was a weakness of the arms and legs and atrophy of the muscles in these parts. The paresis and atrophy seemed to affect both arms simultaneously, and later both legs. Quite recently the atrophic process had begun to affect the right side of the face. He had first seen her in October, 1894, at which time all muscular efforts were performed with difficulty; fibrillary twitchings could be observed on the left side of the face, and less frequently in the upper and lower extremities. The electrical reactions were normal in quality, but reduced quantitatively. There were no disorders of sensibility, except that at times there had been some rheumatic pains in the neighborhood of the knee-joints. At first the reflexes were exaggerated, but at the present time the knee-jerks are less active than when first seen. The main point for consideration was whether this was a primary myopathy, or whether it was of secondary origin. The fact that it began in the face might lead one to suppose that it was a primary atrophy, but it should be remembered that this disorder began in the latter half of life, there was no family history of this disorder, and the distribution did not correspond to that which was observed in the primary disorder. Moreover, in primary myopathy the muscles of the forearm and leg would escape the atrophic process, whereas in the case presented these muscles were all involved. The case was chiefly of interest from the situation of the primary points of atrophy, which he considered to be very unusual indeed. The case was unusual in that the muscles were not affected in groups, but it did not follow the course of the dystrophics, and it seemed to him that the case must be of central origin. He thought it was not a case of progressive facial hemiatrophy, because there were no changes in the bones or in the skin, and because other parts of the body were involved, and the other side of the face was already beginning to be involved. The process was evidently progressive; the patient was decidedly weaker than a year ago.

JACKSONIAN EPILEPSY; OPERATION.

DR. HAMMOND also exhibited a man who had had Jacksonian epilepsy, and had been operated upon several months ago by Dr. Abbé. His attacks had come on with a sensory aura in the hand. He had had as many as fifteen or more convulsions a day. The operation was done on the left side of the skull last March. On removing the bone, the operator had found a circumscribed area of pachymeningitis, and a considerable adhesion of the membrane underneath. A piece of thin rubber tissue had been inserted after separating the adhesions. The bone had then been replaced, and the wound closed. There had been no convulsions since this operation. Prior to it the bromides had had no effect on the attacks; since the operation these remedies had been given. Quite recently the aura had returned, but there had been no attacks. The speaker said that he could not see the advantages of using the rubber tissue, which in this case had been employed in lieu of gold-leaf. There was a well-marked history of syphilis, and this was considered to have been the origin of the disorder.

RAYNAUD'S DISEASE.

DR. A. WIENER exhibited a man who had been referred to him by Dr. Goldstein. Nine years ago the patient had had a fracture of the left forearm with no accident to account for it. Iodide of potassium was necessary in addition to splints to secure proper union. Later one of his toes had become carious and had been finally amputated. The great toe was similarly affected subsequently, but under local and constitutional treatment this too healed. Inquiry showed that eight years ago this man had been a brass-polisher. At the time of the original fracture there had been no pain. A few months after this he had developed severe pains over the chest and forearm. He then changed his occupation, and after this was exposed a great deal to the weather. At the present time the same gangrenous process which had been present in the toes was going on in the fingers of one hand. This history, the speaker said, made it evident that the patient was suffering from Raynaud's disease. He had excluded syringomyelia, because there

were no sensory disturbance and no pain. There was no sugar in the urine. He expected to put this man to bed and pack his feet in cotton. Constitutional remedies would, of course, be employed.

DR. C. A. HERTER said that there could be little question regarding the diagnosis. As to the local condition and the sclerosis of the vessels, he thought it was secondary to the extraordinary changes in the bloodvessels.

DR. JOSEPH COLLINS said that he also felt that there could be no doubt about the diagnosis, and he also agreed with the last speaker regarding the relation of the changes in the vessels to the present symptom-complex. He had seen two cases of Raynaud's disease during the past year. The administration of iodide of potassium and nitroglycerin—the treatment usually recommended—he considered rather dangerous unless carried out cautiously. The only treatment apparently of service was placing the patient in the horizontal position for a long time, together with the administration of moderate quantities of water and measures to maintain vascular equilibrium. Where it was possible the patient should be sent to a climate which would admit of his living outdoors almost all the time. In looking up the literature of Raynaud's disease he had been surprised at the statement made by several operators that this was an incurable disease. Personally he was of the opinion that Raynaud's disease particularly, if not associated with marked changes in the vessels, gave an exceedingly good prognosis, provided the patient could be under control.

DR. HIRSCH did not think that Raynaud's disease, as such, was a sufficient diagnosis. It was only a collection of clinical symptoms which, it had been shown, might be due to various anatomical lesions—to disease of the bloodvessels, disease of the peripheral nerves, to central lesions, and, in some instances, to pure hysteria. We could not say that the prognosis was good or bad, for it depended upon the particular underlying condition.

PARÆSTHESIA OF THE EXTERNAL CUTANEOUS NERVE.

DR. HIRSCH presented a man, fifty years of age, who had had syphilis eighteen years ago, and had indulged liberally in alcohol. Two months ago, after a shipwreck and much exposure, he had arrived in this country. At the time he was wrecked, for about one hour a considerable weight had been borne by one leg, and shortly after this he had noticed a peculiar sensation on the outer side of this limb, the left, about four inches above the knee. It covered an area the size of the palm, and was never noticed at night, or while reclining or sitting. The sensation was especially aggravated by cold. It was not like any ordinary pain. According to the patient's description, it was a sort of burning sensation, or a "burning cold," as he expressed it. Examination showed no change in the electrical reaction, and no evidence of disease with the exception of a diminution of the thermal sense. The case was, therefore, a paræsthesia in the area of the external cutaneous nerve. The speaker said that a number of these cases had been reported last March by Roth, and a few days later Professor Bernard, of Berlin, had independently published several cases of this kind. A number of other cases had since been reported, and many of them had occurred in physicians. One distinguishing feature was the indefinite character of the paræsthesia, and the fact that it was never noticed when the patient was reclining or sitting. Acute infectious diseases had been mentioned in connection with the etiology of the condition. In the case presented, it was possible that syphilis and alcoholism might be considered as predisposing causes, while the prolonged pressure and the exposure at the time of the shipwreck might be looked upon as exciting causes.

TWO CASES OF TUMOR OF THE SPINAL CORD UNACCOMPANIED WITH SEVERE PAIN.

DR. PEARCE BAILEY read a paper with this title. He said that the total number of reported spinal tumors was not large; he had only been able to find 130 in all. His cases were presented merely as a contribution to a subject which merited careful observation.

The first case was a female, fifty-five years of age, who had had a good family and personal history. Last June she had been attacked with a rapid pulse and increased temperature and pain all over the body. There was also albuminuria. Death occurred sixteen days after coming under observation. The autopsy showed œdema of both lungs and marked atrophic nephritis. On the posterior and internal surface of the dura mater was a tumor, three-fourths of an inch long, one-eighth of an inch wide, and elevated about one-tenth of an inch above the surface of the membrane. It was directly opposite the posterior longitudinal fissure, was extremely hard, and finely lobulated. Microscopical examination showed a connective capsule, but the substance of the mass was subdivided by many fibrous trabeculæ. The death of the patient had been due entirely to one of the attacks of pulmonary œdema to which those suffering from Bright's disease are liable.

The second case was a female, twenty-nine years of age. No history of syphilis could be obtained. In 1889 laparotomy had been performed, and a small tumor of unknown nature removed. A second laparotomy had been done and another tumor removed some months later. Subsequently a tumor had been extirpated from the ribs, but it was impossible to obtain any history as to the nature of these growths. In 1889 she developed paralysis and numbness of all four extremities, which lasted ten months. In July, 1883, there had been another similar attack of paralysis. At this time she had also had cystitis. She was treated with strychnine and electricity, and was able after a while to walk out of the hospital. She was readmitted in 1895 with another attack of paralysis. On examination her mentality was excellent, both pupils reacted to light, but the left pupil was considerably smaller than the right; the right side of the face was pale as compared with the left; there was well-marked extensor paralysis of all four extremities. There was a moderate amount of atrophy; both knee-jerks and elbow-jerks could be elicited. There seemed to be some blunting of the tactile sensibility. The urine gave evidence of nephritis. She stated very positively that she had never been subject to any severe pain, and she certainly had no pain at the time of examination. She could move her head freely in all directions, and without any discomfort. There was no tenderness over the vertebral column. The absence of anæsthesia made the location of the tumor difficult, and her exhausted condition made operation impracticable. She died in July, 1895, from pulmonary œdema and suppression of urine. The autopsy showed extensive adhesions of the lungs and an old pulmonary

cavity. The spleen and liver were enlarged. The ureters were dilated and the kidneys showed pyelonephritis and large calcareous concretions. The brain, with the exception of atheroma of the arteries, was apparently normal. On exposing the dorsal surface of the cervical portion of the cord this appeared to be abnormally prominent, and on its removal a tumor was found, which was slightly adherent to the cord. It was an irregular, quadrilateral-shaped mass limited almost exclusively to the ventral side, and affecting the nerve-roots, one, two, three, and four on the right side, and one, two, and three on the left side. The dura itself was thickened. The cord was pressed upon anteriorly and posteriorly, causing it to bulge so that the posterior roots were considerably separated. Sections of the tumor and of the cord were made and stained and exhibited to the Society under the microscope. The tumor was found to spring directly from the external surface of the dura mater. The tumor consisted of an outer zone of fibrous tissue, inside of which was a zone of polyhedral fusiform cells. The remainder of the tumor was in a condition of cheesy degeneration. The picture was a typical one of gumma with excessive degeneration. No tubercle-bacilli were found. Above the tumor was a moderate ascending degeneration. The cord opposite the tumor was not much compressed. The anterior horns were normal as regards their shape and constituent elements. The nerve-roots, as shown in the section, presented no evidence of degeneration. An area of connective tissue surrounded the bloodvessels and apparently indicated the vascular origin of the tumor in the cord. The possible vascular origin of the process explained satisfactorily the absence of pain.

A third might be added, which had been reported in *Brain* some years ago. Here the tumor had extended from the origin of the fifth cervical to the first dorsal nerve, and lay chiefly posteriorly. The nerve-roots were compressed and atrophied, and there were the ordinary ascending and descending degenerations. The symptoms caused by the new growth had been paralysis and loss of sensation, but without the pain characteristic of spinal tumor. These symptoms had existed about three months. The absence of pain was emphasized in the report of this case. Dr. Bailey said that an attempt to account for the absence of pain in these three cases was difficult. All were of slow growth, and pressed but slightly on the cord, and two of them were yielding. The points where the pressure was applied or the rapidity of the growth seemed to be of secondary importance, and the position of the tumor with reference to the membrane appeared to influence but little the occurrence of pain. The most important factor was the consistency of the tumor—those which softened and degenerated most easily were the least liable to be accompanied by pain. His conclusions were: (1) That it was probable that tumors of the spinal cord were more frequently painless than was commonly supposed; and (2) that the pain was indicative rather of its nature than of its situation.

DR. B. SACHS said that this question of pain as a diagnostic symptom of tumor of the spinal cord had only been recently discussed before this Society. At that time he believed he had been in the minority in stating that he did not think so much stress should be laid upon this symptom as had been generally done; hence, he was glad to hear of those cases which confirmed his view. The symptom, pain, would naturally arise in those cases in which there was a very large tumor on the ventral surface actually pressing the cord against the posterior surface; it would arise still more frequently if the tumor invaded the posterior root-fibres. He would again emphasize the fact that root-symptoms were important in the earlier stages of tumor, whether they were of the sensory kind or of the atrophic order. In the majority of cases pain was, of course, present as an early symptom. In addition to the root symptoms, the next important point was that the symptoms in the majority of cases were apt to be unilateral, with a rapid involvement later of both halves of the cord; there was not that symmetry in the symptoms which was usually observed in the subacute affections of the spinal cord.

DR. LEONARD WEBER remarked that these tumors described in the paper were not tumors *of* the cord, but were *upon* the cord. In 1891 he had met in Germany a physician who had had a large experience with tumors of the spinal cord. The history of these cases showed that there had been no special pain present.

DR. C. A. HERTER thought that without doubt these extradural tumors should be classed as tumors of the spinal cord, for when they produced symptoms they did so by their influence on the cord and its nerve-roots. He also thought that it was pretty well established that extradural tumors were much less apt to produce pain than intradural tumors. The cases so well reported in the paper were certainly valuable additions to this subject. Some years ago he had gone over the subject of solid tumors of the spinal cord, and had found only twenty-six cases, three of them having been in his own practice. In several of these there had not been much pain, at least in the beginning of the disease. A possible explanation of this might be found in the fact that the origin of a tubercle was usually in the substance of the cord itself—that the tubercular process began by the deposition of tubercle-bacilli in that portion of the cord which afforded the best nutrient basis for the bacilli. In one of his cases it was quite evident how the process had extended by a narrow line of bloodvessels into the anterior horn of one side, and had subsequently extended to the white matter. It was easy to see how in a case of this kind there should be no pain. In syphilitic tumors of the cord the process was apt to originate in much closer connection with the pia mater, thus making root-symptoms, or a meningitis involving the circumference of the cord, more liable to occur. He had been impressed with the different character of the symptoms in cases of sarcoma invading the cord from without, and cases of glio-sarcoma starting from within. In the majority of cases of sarcoma of the spinal cord the process was a secondary one, and almost invariably involved the posterior nerve-roots, giving rise to intense pain. Another class of sarcomatous tumors originated about the central part of the cord, and in these there was little or no pain. The reason for the absence of pain in cases of syringomyelia was the early involvement of the sensory fibres.

THE PRESIDENT said that tumors outside of the cord-substance were more likely to cause pain, unless they were extradural; but a tumor within the cord, unless so large as to compress the nerves, could hardly be expected to cause pain. Again, in cases of tumor outside

of the cord the pain was usually of a shooting character, and followed the course of the nerve irritated. The explanation of the absence of pain in the cases recorded in the paper appeared to be due rather to the situation than to the nature of the tumor.

TWO SPECIMENS OF BRAIN-TUMOR, WITH REMARKS ON THE DIFFICULTY OF DIAGNOSIS.

THE PRESIDENT presented a pathological specimen removed from a laborer, fifty-six years of age, who gave a history of an injury to the head when twelve years of age. As a result of this there had been during his boyhood repeated *slight* attacks of epilepsy. Four years previous to his death he had received another injury to the side of the head, and two years later had begun to have definite localized convulsive seizures on the left side of the body. They always commenced with a sensation in the left hand of slight tingling or numbness. This would be followed by a full convulsion involving the left hand and arm, and sometimes the leg. These attacks recurred at intervals of two or three weeks. He had no pain, and gave no history of disturbed vision, and the ophthalmoscope showed no optic neutritis. The only other symptom was a slight paresis on the left side, lasting only a few days, after each epileptic seizure. On examination the gross strength was good; there was some loss of muscular sense; there was some ataxia in the left hand and exaggerated reflexes, particularly of the left patella. There had been no headache. In June, 1895, an ordinary trephine-opening was made, and some adhesions between the dura and skull were found. The attacks ceased for some time after the operation, but when seen by the speaker last October these attacks had returned. A diagnosis had been made of a localized lesion, probably due to pachymeningitis following a trauma and involving the hand-centre. An operation was therefore performed by Dr. Stimson. The dura was found adherent, as had been expected. The operation was attended by much hemorrhage, and followed by great shock, and in a few hours death ensued. At the autopsy a large sarcoma was found, involving the leg-centre and a portion of the arm-centre, and extending a considerable distance back into the parietal lobe.

The second specimen had been removed from a boy, eighteen years of age, having a negative family history. For two years previous to his death he had complained of more or less headache. His gait had been uncertain and staggering, but in no particular direction. He complained of considerable continuous headache. For the last year he had complained of loss of vision. Examination showed optic neuritis and optic atrophy, and the boy was almost blind. There had been no convulsions during this time, but there was a history of one or two attacks of vomiting at long intervals. A diagnosis had been made of tumor of the cerebellum, localized on the left side because of the deafness on the left side, a very slight facial paralysis, and the loss of sensation on the left side. Two or three days before death there were several convulsions with vomiting, and he died in coma. There was at no time any mental dulness or apathy. The autopsy showed, according to the report of Dr. Warren Coleman, a large single cyst containing 73 c.c. of slightly turbid, straw-colored liquid, which had not been coagulated by the formalin, though the cyst-wall was very thin over its upper part. The growth was situated in the left hemisphere of the cerebellum. The liquid apparently contained no albumin, as it did not coagulate on the addition of the commercial formalin or on the application of heat. It did contain mucus. Examined microscopically, the liquid was found to contain an abundance of old blood-cells, well hardened, a moderate number of protoplasmic mononucleated cells, apparently leucocytes, whose proto plasm was filled with highly refracting globules and larger flat cells, mononucleated, resembling endothelium. Strings of mucus were found in abundance. The liquid contained something which turned Fehling's solution a rich purple, and which threw down a red sediment after twenty-four hours. The growth was a glioma.

DR. SACHS referred to a case, seen many years ago, in which there had been attacks of hemiplegia and intense frontal headache. A diagnosis had been made of gumma, but the autopsy had shown a glioma very much like that presented. All the symptoms had disappeared for about four months under the use of antisyphilitic treatment.

DR. L. STIEGLITZ said that the first case reminded him of one operated upon about a year ago in which a gliosarcoma had been found. In this case there had been very few symptoms present for months. One very valuable symptom had been the exquisite tenderness to tapping the skull. He believed that this symptom could have been elicited in the case just reported because of the presence of adhesions. It was unfortunate that in the first operation the attending surgeon had made the trephine-opening so small—altogether too small to admit of proper exploration. The second case closely corresponded to one he intended soon to report, in which there had been deafness on one side. The case also brought out the malignity of many tumors of the brain.

DR. HERTER remarked that the long duration of the condition in the first case was a point to be considered in connection with the presence of such few symptoms.

SPECIMEN SHOWING MULTIPLE GROWTHS IN THE BRAIN OF A CHILD.

DR. JOSEPH COLLINS presented a specimen from a child who had presented a condition similar to that formerly described in the books as spurious hydrocephalus. The patient was admitted to Dr. H. D. Chapin's wards in the Post-Graduate Hospital, and the diagnosis of tumors of the brain pressing on the third ventricle was made: one situated near the posterior commissure, one pressing against the head of the nucleus caudatus, while another seemed to include the left anterior quadrigeminal body. Microscopical section of the new growths showed them to be tuberculous. On the inferior surface of the cerebrum was a new growth about the size of an American walnut, and on opening the brain four other growths were found.

DR. C. L. DANA described the clinical history of this case. He said that the child was about two years old, and had been perfectly well up to last August, when there had been a sharp attack of diarrhœa. After this the child became sleepy, and remained all the time with the eyelids closed. The was no paralysis, and no pain and no convulsions. About three months later he had examined the child. At that time it was cataleptic; there were no paralyses; no sensory symptoms; it could

hear and could swallow; there were double ptosis and slight nystagmus; there was no ophthalmoplegia except the double ptosis. The hebetude deepened, but there were no convulsions. The child died in the latter part of December. The speaker said that he had tapped the spinal cord in this case and removed two drachms of clear fluid which, on examination, showed no evidence of tubercle-bacilli. The autopsy showed these multiple tubercular tumors. He had made the diagnosis of tumor of the midbrain. He believed that most of the symptoms were due to the growth involving the corpora quadrigemina. He had been particularly interested in this marked somnolence in cases in which there was pressure on the third ventricle or on the corpora quadrigemina.

Dr. Sachs said that there was a marked resemblance between this case and one reported by him in an article on disease of the midbrain region. In the case referred to, there had been an increased apathy, but owing to its tubercular nature he had attributed this to the stage of the disease. He had been surprised to find also in his case several tumors in the cerebellum as well as a tumor in the midbrain region.

Dr. W. B. Noyes presented a specimen removed from a man who four years ago had been crushed between two cars. The pressure had been exerted at about the level of the first lumbar vertebra. No paralysis or fracture had resulted, but he had suffered from shock, and had been confined to bed for two months. About one year ago he had had an apoplectiform attack, characterized by blindness and deafness and paralysis of both legs, lasting for twenty-four hours. When seen by the speaker, three weeks ago, there had been spastic paraplegia, marked ataxia, increased knee-jerk and ankle-clonus, great tenderness all over the body, but especially in the head. A diagnosis had been made of brain-tumor. Death occurred from a sudden paralysis of respiration. The autopsy showed an endothelioma of the dura mater occupying the place of the occipital lobe. The tumor was irregularly kidney-shaped, with its broadest diameter from side to side. Its weight was 300 grammes. It was hard, nodular, and did not infiltrate the brain-tissue. The spinal cord was examined, but nothing abnormal found.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, Held in Albany, January 28, 29, and 30, 1896.

(By Telegraph to The Medical News.)

The Ninetieth Annual Meeting of the Medical Society of the State of New York was held in Albany, January 28, 29, and 30, 1896, Roswell Park, M.D., of Buffalo, President, in the chair.

First Day—January 28th.

The President in his inaugural address referred to the revival of the *Index Medicus*, the advantage to the profession of the valuable collection of books known as the medical department of the State Library, and to other topics of general interest. He referred particularly to a recent court-decision by which a physician, when bringing suit for services, was debarred from disclosing the nature of such service.

The first paper was a note on the

use of permanganate of potassium in diseases of the skin.

Dr. L. Duncan Bulkley, of New York, said that he had found accidentally from a patient that a 1 or 2 per cent. solution of permanganate was an excellent local application to relieve pruritus. It produced a brown stain lasting some time, and by its oxidizing action caused a marked reduction in the thickness of patches of diseased skin.

water and its relation to disease.

The discussion was opened by Dr. W. P. Mason, of Troy. He said that peaty water or water from low-lying lands sometimes caused mild diarrhœa; but as yet little was known as to its relation to disease. He quoted as an example of the disastrous effects of an impure water-supply a severe epidemic of cholera occurring at Messina, Sicily. The water-supply was found to have been contaminated by the washing of clothing, and also by the close relation of the sewers and water-mains, both being of unglazed material. By prohibiting the use of this contaminated water and substituting pure water from another source the epidemic collapsed as if by magic. Observations both in England and in this country showed that typhoid fever frequently followed heavy rains when they succeeded spells of drought. He then considered the question of whether it paid to have a pure water-supply, assuming the value of a human life to be, as had been conservatively stated by E. F. Smith, two thousand dollars, and, computing the loss of time in the cases that recovered, he concluded that the total yearly loss to the city of Albany alone was practically equivalent to a tax of two hundred thousand dollars.

Dr. Lewis Pilcher, of Brooklyn, in the discussion, said he considered it an opportune occasion to refer to a bill now before the Legislature relative to the cutting of ice in rivers. The Legislature had requested the opinion of the Society on this matter, and the matter had been referred to the Committee on Hygiene. He desired now to present the report of the Committee, viz.: "That it was the opinion of the Committee that it was perfectly proper to allow ice to be cut from rivers under certain reasonable restrictions." This opinion was based on the well-known self-purification of running streams. The bill proposed very unwisely, it was thought, to prohibit absolutely cutting of ice from all rivers.

Dr. A. Jacobi, of New York, heartily approved of the Committee's report, for it should be remembered that in addition to this self-purification alluded to, foreign matter contained in water was constantly sinking as the ice was being formed at the surface.

Dr. V. R. Merrill referred to a sudden outbreak of typhoid fever this winter in the Chemung Valley, after some of the ice had already been cut and stored for use in the following summer. As the typhoid bacilli had been readily detected in the river-water, the question naturally arose as to the probability of this ice having also been contaminated.

Dr. M. A. Crockett, of Buffalo, read a paper on

sepsis of the newborn.

Prognosis in these cases was most unfavorable when gastro-intestinal disorder was one of the prominent evi-

dences of sepsis. There were three cases reported, and statistics were given from a large series of cases, showing the advantages of the careful and systematic aseptic dressing of the umbilicus.

DR. A. JACOBI emphasized the skin, mouth, and anus as frequent paths of infections. The liquor amnii was a common source of infection. Slight denudations of the mucous membrane in the mouth of the newborn afforded easy means of access to micro-organisms.

DR. CHARLES JEWETT, of Brooklyn, said he had never seen a case of sepsis in the newborn in which the infection had occurred through any other channel than the umbilicus.

DR. CHARLES JEWETT, of Brooklyn, read a paper on

THE QUESTION OF PUERPERAL SELF-INFECTION.

Many careful and distinguished observers were quoted as opposed to the probability of self-infection, some of these opinions being based on the belief that the acidity of the vaginal secretion was inimical to germ-life. All childbed infection in previously healthy women was by contact. The most carefully prepared statistics showed that antepartum douching was unnecessary, if not positively harmful.

DR. A. WALTER SUITER, of Herkimer, presented

A MEDICO-LEGAL NOTE,

the object of which was to show that although it was reasonable to suppose from well-established physical laws that a bullet, owing to the heat produced by the friction of impact, could not carry infection into a wound, recent experiments of Dr. Legard, of the U. S. Army, showed that this supposition was incorrect. This observer experimented on animals with bullets infected with recent cultures of anthrax, and found that these animals died with symptoms of anthrax-infection.

DR. J. L. HEFFRON, of Syracuse, read a paper entitled

SHALL THE STATE ATTEMPT TO CONTROL THE SPREAD OF TUBERCULAR DISEASE?

which will appear in full in a later issue of THE MEDICAL NEWS.

DR. A. JACOBI said that in Europe it had been found that 28 per cent. of those afflicted with tuberculosis could be restored to usefulness, and that insurance-companies in certain countries of Europe had learned that it was cheaper for them to establish and run sanitaria for those of their policy-holders afflicted with tuberculosis than to pay the amount represented by these policies if these individuals were allowed to die.

DR. E. F. BRUSH, of Mount Vernon, said that his investigations had showed him that the only people on the face of the earth who enjoyed immunity from tuberculosis were those who did not domesticate the cow.

A discussion followed on

EARLY AND LATENT SYPHILIS IN INFANTS AND YOUNG CHILDREN.

DR. GEORGE T. ELLIOT, of New York, took up the question of hereditary syphilis. He said that the syphilitic infant might at birth be well nourished, and remain so for some weeks, and then suddenly die without having given any signs indicative of that disease. In other cases, the child would begin to lose flesh after about three months, and then present the usual evidences of syphilis. The cutaneous lesions were usually more hyperæmic and diffused than in acquired syphilis. The bullæ on the palms and soles were peculiarly characteristic, and were distinguished from simple pemphigus by the fact that the latter has no special localization, being found on all parts of the body, appearing epidemically and running a definite course in a few days. Condylomata at the corners of the mouth were also diagnostic of syphilis, as were also the bone-lesions found at the epiphysis of some of the long bones. Dactylitis, however, could not be considered pathognomonic, as tubercular lesions of a similar character were sometimes found. The deafness of hereditary syphilis, so much insisted upon by Hutchinson, usually occurred suddenly and was persistent. The well-known "Hutchinson-teeth," it should be remembered, were observed in the second set of teeth.

DR. B. SACHS, of New York, discussed the

NERVOUS MANIFESTATIONS OF SYPHILIS.

He said that syphilis of the nervous system was apt to be a cerebro-spinal affection, and might involve a small area of the brain or of the spinal cord. It might be briefly stated that cerebro-spinal syphilis was an extensive disease of slight intensity. A child with mild palsy, symptoms of cortical irritation, and imperfect speech might be reasonably considered to be suffering from cerebro-spinal syphilis. In more than two hundred cases of infantile palsies, in which Dr. Peterson and he had carefully inquired into the etiology, it had been found that only one case was due to syphilis. Among the spinal manifestations of hereditary syphilis was a spastic paraplegia, coming on late, and often associated with palsies.

DR. L. DUNCAN BULKLEY said that hereditary syphilis was not so common as formerly. Syphilitic infants should be treated at the earliest possible moment, for, as Fournier said, "Nothing is so dangerous to its surroundings as a syphilitic child." The speaker expressed the belief that the best treatment was inunction with a half-strength mercurial ointment, and this treatment, as in the adult, should be persisted in for two or three years. The syrup of the iodide of iron was a most important remedy in infantile syphilis.

DR. EDWARD D. FISHER, of New York, concurred in the opinion expressed by the last speaker regarding the treatment, except that where "mixed treatment" was employed or iodide given, he preferred to give the iodide separately from the iron. Again, it should be remembered that in the late cases the children did not always need iron.

DR. GAYLORD P. CLARK, of Syracuse, read a paper on

THE EQUILIBRIUM-FUNCTION OF THE EAR,

in which some recent physiological investigations and the inferences from them were presented. In brief, it had been found by experiments on the dogfish that when this fish was rotated in certain planes and the ampullæ of certain semicircular canals stimulated, or their nerves divided, there resulted certain movements of the eyes and fins, indicating an effort to restore the fish to its normal resting position. Section of the nerve on one side appeared to cut off the normal impulses, and left normal impulses on the other side unbalanced, so that

the fish received the impression of being turned on one side. The author said that he had succeeded also in collecting considerable evidence going to show that the human ear functionated in a similar manner.

DR. ROBERT H. GRANDIN, of New York, read a paper on

DISEASES OF INTRAUTERINE LIFE DUE TO THE MOTHER.

He said that there was evidence to show that most of the infectious diseases could be transmitted from the mother to the fœtus, but the mode of this transmission was purely one of speculation The anatomy of the placenta showed that probably there was an interchange of material, either nutrient or toxic, in the intervillous spaces. This transmission was effected probably by transfusion or by migration of leucocytes. According to this theory, a healthy placenta only could offer an effectual barrier to the transmission of disease, but it was probable that a perfectly healthy placenta did not often exist.

DR. P. W. VAN PEYMAN, of Buffalo, present by invitation, in a paper on

ECLAMPSIA,

said that the toxins causing uræmia were varied and numerous. In eclamptics the urine had been found less toxic, while the blood-serum was more toxic than normal. Jaundiced urine was exceedingly toxic. His experience in the treatment of eclampsia with veratrum viride had been favorable, provided the pulse had been sufficiently strong to warrant the administration of this drug. Pilocarpin was too depressing in its action. In his opinion many cases of eclam psia died as the result of too heroic medication.

DR. CHARLES W. ELIOT, President of Harvard University, delivered an address on

MEDICAL EDUCATION OF THE FUTURE,

in which he compared the educational facilities of thirty years ago with those of the present day, and also with the greater requirements now demanded of the physician. He said that the old régime had demonstrated the fact that even with poor preparation for the study of medicine it was possible to turn out some very worthy and skilful physicians, but it did not follow from this that the practice was a wise one. The rapid advance in the collateral branches, particularly in the analysis of the urine, in microscopy, and in bacteriology, called for a broader education, not only after entering the medical school, but in the preliminary training. There had been greater improvements in methods of diagnosis than in treatment. The ever-advancing science of preventive medi cine charged the physician of to-day with new and very important duties which required a high degree of intelligence and training.

Thoroughly educated and competent physicians were now needed to fill public sanitary positions, positions which, it need hardly be said, should bring with them adequate compensation. Every physician should be a zealous philanthropist and missionary, and hence there should be not only a full knowledge of preventive medicine, but the physician should possess the requisite moral and intellectual powers. Such a physician could exert a most beneficial influence in checking the violent and unreasoning opposition of such people as the anti-vaccinationists and anti-vivisectionists. In order to obtain this better education demanded by the times, it was necessary that better training should be given in the years between the ages of six and twenty-one, for the four years of education at the modern medical school were already filled to overflowing. Much time was now wasted in our schools. Physicians, he said, could effect a needed reform in this direction if they were less backward about assuming positions as school trustees, where they could do away with the antiquated methods of teaching now in vogue and largely due to the long dominance in school boards of the clerical element. Johns Hopkins University had taken a most important step in the right direction, and Harvard had already announced her intention of following, *i. e.*, the requirement of a degree in arts, philosophy, or medicine of those entering the medical school.

(To be continued.)

REVIEWS.

OUTLINES OF PRACTICAL PHYSIOLOGY, BEING A MANUAL FOR THE PHYSIOLOGICAL LABORATORY INCLUDING CHEMICAL AND EXPERIMENTAL PHYSIOLOGY, WITH REFERENCE TO PRACTICAL MEDICINE. By WILLIAM STIRLING, M.D., Sc.D., Brackenburg Professor of Physiology and Histology in the Owens College, and Professor in Victoria University, Manchester, etc. Third edition, revised and enlarged, with 209 illustrations. Philadelphia: P. Blakiston, Son & Co.

THE well-known *Outlines of Practical Physiology*, compiled by Professor Stirling, for the most part from the standard works on physiologic chemistry and experimental physiology, has reached a third edition and appears in a revised and enlarged form. The success which this book has met with not only in England, but in this country as well, is sufficient proof of its merits as a convenient and satisfactory guide in laboratory-work. The methods for the investigation of the chemic composition and properties of the fluids and solids of the body are clearly and tersely described and adapted for relatively inexpensive chemic apparatus. The same holds true with reference to the methods for performing the fundamental experiments illustrating the physiology of the nervous system and special senses. Some of the experiments detailed here require, however, for their repetition very elaborate apparatus, to be found only in well-equipped laboratories. Every student, however, who is entering on the study of physiology should possess a copy of this manual and repeat, as far as possible, the experiments here detailed. Physicians will find, in a convenient form, all the best methods for the examination of the blood, urine, and secretion generally.

A TEXT-BOOK OF FORSENIC MEDICINE AND TOXICOLOGY. By ARTHUR P. LUFF, M.D., Lecturer on Medical Jurisprudence and Toxicology in St. Mary's Hospital. In two volumes, small 8vo. Vol. I. 416 pages. Vol. II. 334 pages and index. London and New York: Longmans, Green & Co.

THIS is a compact and useful compendium of medical jurisprudence and toxicology. It is illustrated with twelve full-page plates and fifty-seven figures in the text. One of the plates, representing various blood-spectra, is in colors. All the illustrations are well executed and the general typography is excellent.

The matter of the book is well selected and arranged, and follows the usual order of treatises of this character. The toxicology covers over three hundred pages, being all included in the first volume. This is not an undue proportion for so important a subject. Experience in this country shows that physicians are more liable to err in the diagnosis of cases of poisoning, or, at least, to mistake them for disease, than in almost any other field of work. We are glad to note that a considerable space is given to Reinsch's test for arsenic. The ingenious method described for securing the crystalline sublimate on the surface of a glass slip, so that it can be examined under the microscope, will be of much use. Dr. Luff does not think it possible to determine from the measurements of the corpuscles that the blood was positively human blood, but thinks that it is only safe to say that it is mammalian blood. This is a wise and conservative view. Much injury has been done to the cause of expert testimony by the readiness of certain experts to testify positively in this and similar cases in which positiveness cannot be attained.

The treatment of all the topics seems to be excellently proportioned and we consider the work to be a most valuable addition to the literature of the subject.

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THE DISEASES OF CHILDREN'S TEETH: THEIR PREVENTION AND TREATMENT. A MANUAL FOR MEDICAL PRACTITIONERS AND STUDENTS. By R. DENISON PEDLEY, M.R.C.S., L.D.S. Eng., F.R.C.S. Edin., Dental Surgeon to the Evelina Hospital for Sick Children, London. J. P. Segg & Co., London; S. S. White Dental Mfg. Co., Philadelphia.

As the title-page indicates, this manual is designed for medical practitioners and students, and as such it presents in clear and readable form just the information that is needed in order to understand and treat the ordinary conditions affecting the teeth of children. The contents include chapters on Structure, Eruption, Caries, Palpitis, Periodontitis and its Sequelæ, Irregularities of the Teeth, the Hygiene of the Mouth, and Treatment. The chapter on Oral Hygiene is admirable, and is thoroughly abreast of the modern pathology. Under "Treatment," mechanical and operative procedures naturally are but slightly discussed, but their principles are clearly outlined, and in cases of necessity could be satisfactorily applied by any medical man. Indeed, the author's work is so practical in its scope that dental practitioners might peruse its pages with advantage to their youthful patients. A satisfactory index closes the volume. The illustrations are numerous and add greatly to the value of the text.

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ELEMENTARY TECHNIQUE IN HISTOLOGY AND BACTERIOLOGY. By ERNEST B. HOAG, A.B., B.S., Instructor in Zoölogy and Physiology, Throop Polytechnic Institute, Pasadena, Cal., and H. KAHN, Pharm. (Mich.), Assistant Demonstrator in Bacteriology, Northwestern University Medical School, Chicago. E. H. Colegron and Co., Chicago, 1895.

A COMPEND of 130 pages for beginners in histology and bacteriology, containing the various methods of staining and preparation of tissue for microscopic study. No attempt is made to introduce descriptive histology. The book is poorly printed, and for a work intended for beginners contains too many technical abbreviations. It is up to date, and will no doubt be useful to those for whom it was intended.

CORRESPONDENCE.

INFLUENCE OF SUSPENSIO-UTERI UPON PARTURITION.

To the Editor of THE MEDICAL NEWS,

SIR: Having recently had some unfortunate experience concerning the influence of suspensio-uteri upon parturition, I feel that it is highly important that this question be settled in an authoritative way as soon as possible. The only way to determine the question is by studying the actual results as seen in the practice of all operators. I will be much indebted to anyone having had a case of pregnancy following suspension of the uterus, if he will communicate the details of the case or cases to me.

Very truly yours,

CHARLES P. NOBLE.

1037 NORTH BROAD STREET, PHILADELPHIA.

THE INDEX MEDICUS.

To the Editor of THE MEDICAL NEWS,

SIR. We ask permission to announce to the subscribers to the *Index Medicus* that the January number, which comprises the literature of December and the beginning of January, is printed and will be distributed in a few days. The "back number," covering the period from May 1 to December 1, 1895, is ready for the printer, but from its extent will require some time before it can be issued.

It is proper to add that it has been found impossible to adhere to the limited number of subscribers first proposed, as subscriptions from distant points in response to applications from friends abroad still occasionally arrive. One, for example, was received to-day from Ceylon through a London friend.

J. S. BILLINGS,
ROBERT FLETCHER,
Editors of *Index Medicus*.

WASHINGTON, D. C., January 23, 1896.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. ARMY, FROM DECEMBER 31, 1895, TO JANUARY 13, 1896.

The appointment of JAMES SPRIGG WILSON to be Assistant Surgeon, with the rank of First Lieutenant, to rank from December 16, 1895, is announced. He will report in person, without delay, to the President of the Army Medical School for Instruction.

Leave of absence for six months, on account of disability, is granted Major CLARENCE EWEN, Surgeon.

Leave of absence for two months, to take effect on or about January 21, 1896, with permission to go beyond sea, is granted Major CURTIS E. MUNN, Surgeon, Benicia Barracks, California.

The leave of absence on surgeon's certificate of disability granted Major JAMES C. WORTHINGTON, Surgeon, is extended six months on account of sickness.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 4, 1896.

January 3, Assistant Surgeons M. S. GUEST and C. P. BAGG ordered to examination for promotion.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

HYDROTHERAPY IN TYPHOID FEVER.

BY A. L. BENEDICT, A.M., M.D.,
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THE Brand method of treatment of typhoid fever, with or without modifications, has been so enthusiastically indorsed in this country by Baruch, Osler, and other eminent clinicians, that it is with some hesitancy that I offer a paper which, though not strictly antagonistic to the immersion-treatment, nevertheless represents strongly conservative views.

We may say, approximately, that at present all the typhoid patients in hospital wards in this country are treated by immersion, and all the private patients by methods that are hydrotherapeutic only to the extent of cool sponging. Such a statement is not literally true, but the exceptions are certainly rare. It is also probably true that though most expressions of opinion heard in societies or read in journals favor the Brand treatment, or its modifications, a secret ballot would show an overwhelming majority of the profession against this method. Neither the discussion nor the vote, however, would be decisive as to the merits of the issue. We must ask, rather, what the opportunities for observation, and what the ability for forming an opinion on the two sides. In Buffalo, with a population of 350,000 inhabitants, we may expect about 500 cases of typhoid annually. Of these, 200 will be treated in hospitals, leaving about 300 cases to be divided among the 500 practitioners of the city. It is obvious, therefore, that the average physician treats a very small number of cases. However, it must be admitted that with the exception of the open country, and a few cities with unusually good water-supply, the figures given do not adequately represent the prevalence of typhoid, and that the private practitioner of the small towns has not only relatively, but absolutely, better opportunities for studying typhoid than has his city colleague. We must also bear in mind that "experience" does not mean a census of cases, that one may acquire more real experience from watching one case than another from treating fifty, and that with equal powers of observation the man who has seen ten cases is almost as well equipped as the one who has had a hundred. All things considered, we must conclude that the question as to the immersion-treatment of typhoid fever has excellent advocates on both sides, so that no one need hesitate to express an opinion through fear of lack of support.

Experience with antipyretic drugs has exploded the old notion that elevated temperature is the essence of a fever. Within a limited range, say between 101.5° and 103.5°, the temperature is not necessarily an index of the severity of the disease, and one of the ablest clinicians of the country has said that an evening temperature of 103° in typhoid may be considered as normal to the disease, and as requiring no interference. Advocates of the strict Brand treatment do not claim that the baths are decidedly antipyretic, but regard a marked lowering of the temperature as throwing doubt on the diagnosis. Others, however, do use the immersion-bath to reduce temperature, and still regard themselves as followers of Brand. To facilitate reference I will number and italicize certain propositions that I would like to submit:

1. *If a temperature becomes so high that it must be brought down (103° or 103.5° and over), antipyretic means should be selected that will produce the least shock. Immersion will rarely fulfil this requirement, even its advocates admitting it to be painful.*

2. *It is bad practice to cool a fevered body by plunging it into ice-cold water as one would cool the contents of a hot test-tube. In general, cool sponging of one part of the body at a time is to be preferred. Occasionally an antipyretic drug, such as acetanilid, phenacetin, phenocoll, or lactophenin, may be used.*

3. *Any bath below the temperature of the body has the power of abstracting heat, and if it produces chilliness or symptoms of mild shock, it is a cold bath, whether the absolute temperature be 60° or 95°.*

In any infectious disease there is the obvious indication of removing waste-products.

4. *The cold bath—as just defined—removes comparatively little excrementitious matter from the body, it checks any existing tendency to sweating, and throws the blood inward to organs already infiltrated or irritated by toxic principles.* It is claimed that the baths increase the renal elimination. Many of the case-reports brought forward to support this theory simply cite the quantity of urine passed. Comparing this quantity with the amount of fluid nourishment and water drunk, and considering the possibility of still further absorption of water through the skin, it is obvious that three alternatives confront the patient—diarrhœa, excessive diuresis, or dropsy.

5. *The fact that much urine is passed, or even that urinary solids are increased during treatment by immersion, does not show that the kidneys are acting in a more healthful manner, but that they are being subjected to greater strain.*

6. *The immediate effect of cool immersion is to cause congestion of the internal organs, adding fuel to the inflammatory foci and embarrassing the heart, lungs, liver, spleen, and kidneys, whose functions are already severely taxed by disease.*

7. *The fact that the patient leaves the bath with blue lips and chattering teeth is not simply an æsthetic objection, as has been declared.*

If the immersion-treatment is not markedly and directly antipyretic—and the strict disciples of Brand say that it is not—and since it is not an aid to elimination—even granting that elimination is not interfered with—what is its *modus operandi?* Dr. Baruch, one of the ablest advocates of the method, ascribes to it tonic properties, explicable on the theory of increased phagocytosis. Now, the undoubted benefits of cold bathing for persons of debilitated but not diseased constitutions may well be explained on the theory that the functions of the leucocytes are stimulated; but the writer's prejudice against the immersion-treatment of typhoid fever rests largely on a study of the effects of bathing and swimming on healthy or comparatively healthy persons. The temperature of still lake-water, near shore, whatever the size of the lake—excepting a few very deep and cold lakes fed by subaquatic springs—is about the same, and on sunny summer days varies from 70° to 85°. The writer has studied for three summers—not to mention less systematic observations for a much longer period—the effects of swimming on some two hundred persons, mostly boys of about fourteen, but including a number of girls and women, and of all ages from four to seventy. It should be said that the observations were direct and not statistical, a bathing-suit not affording the conveniences for taking accurate notes. As the conclusions reached have a direct bearing on the subject of the paper, they are numbered consecutively with the other propositions submitted.

8. *Except for menstruation and previous lack of physical training, sex has no modifying influence on the effects of bathing.*

9. *Other things being equal, young children seem to endure bathing better than older people, probably because their circulation is more rapid and because they usually swim in shallower and warmer water.*

10. *When air and water are warm, persons of average vigor can safely bathe twice daily. More frequent baths produce depression in all but the most robust.*

11. *Under the most favorable circumstances the bath should not be prolonged beyond half an hour, and for most persons fifteen minutes is the proper limit.*

12. *Drying and dressing should never be postponed after subjective or objective symptoms of chill present themselves.*

I have often noticed boys with livid or almost white lips who persisted in the declaration that they were not cold. I was compelled to doubt their truthfulness, especially as indifference to this rule resulted in diminished strength, in lagging at games and other athletic exercise, and in loss of appetite, and predisposition to colds, transient dyspepsia, etc.

Can we expect that the typhoid-fever patient will receive all the benefit from immersion that a healthy person gains and be immune from the possible disadvantages? The advocates of immersion practically answer this question in the affirmative. The genuine Brand bath employs water of about the same temperature as that of the surface of a lake on a warm summer day. As often—perhaps usually—practised, the temperature is about what the swimmer finds on a cool day or after the water has been stirred up by a storm. The period of immersion is practically the same as that assigned for lake-bathing under favorable circumstances, and twice that allowable for bathing in cool water. Thus we may say that:

13. *The average immersion-bath is as cold and as long-continued and is repeated from two to four times as often as that which a healthy swimmer of average vigor can endure without evident depression.*

14. *The typhoid patient has not the benefit of exercise during or after the bath, nor of increased circulation and respiration inevitable in the effort to keep the nose above the surface of the water.*

15. *If the typhoid patient is to be immersed at all, he must be lifted to and from the tub with the greatest care; he must be thoroughly dried and warmed with towels, and the same water must not be used for several patients.*

How is the typhoid patient protected from the ill effects which would be inevitable in a healthy person from bathing similar in temperature, duration, and lack of exercise? Speaking from purely physical consideration of the subject, we may say that the elevated temperature of the disease protects him; but—

16. *There seems to be something more than mere abstraction of heat-units in the depression subsequent to bathing.*

Aside from the nervous and semi-hysterical shock which girls and even men unaccustomed to swimming experience from entering deep water, it is noticed that young children bathing in the shallowest and warmest water, and who present no evidence of chilliness, are gradually weakened by too long and too frequent bathing. Much of the so-called malaria after vacations is due to what some physician has termed water-soaking. The word is not scientific, and I cannot furnish a rational explanation,

but the fact of depression following a course of bathing without obvious chilling is well established.

After all *à priori* arguments, there remains to be considered the magnificent accumulation of statistics in favor of the immersion-treatment of typhoid. However, it must be recognized that, while figures do not lie, they may be as misleading as certain persons who are literally truthful. It is easy enough to complete a certain kind of statistics to show that tobacco, alcohol, and narcotics in general conduce to longevity; every new drug, however worthless it may prove to be, comes to us supported by unimpeachable authority and unanswerable case-reports. Anyone who has tried to generalize from his own case-records, without attempting to prove any particular theory, knows how often he is puzzled as to the classification of individual cases, and can realize how easily such cases may be made to support either side of an argument. Typhoid is the only common specific disease that lies within my field of practice, and it is unpleasant to feel that I am in opposition to the best and most modern authorities; yet I am comforted by the outcome of similar conservatism in regard to the therapeutic properties of testicle-juice and tuberculin. It is not possible at the present time to refute the case-reports of hospital attendants nor to show that the "post hoc, propter hoc," fallacy has been committed. Yet the following considerations must be borne in mind:

17. *In comparing death-rates the advocates of immersion very properly exclude fulminating and neglected cases from their own tables, but ignore the fact that just such cases swell the general mortality.*

18. *The average death-rate of properly treated typhoid cases according to any of the older methods is not so high as 20 or 30 per cent., as the immersionists sometimes declare.*

19. *Many, if not the majority, of ward-patients are stimulated by the ordinary comforts of cleanliness, warmth and even temperature, regular and comparatively wholesome feeding, etc.; whereas patients in private practice are accustomed to and require a higher scale of physical comfort.*

20. *The advocates of the immersion-treatment include in their statistics many cases which have had but few baths, and which an unbeliever would say recovered in spite of, rather than on account of, immersion.*

21. *Hemorrhage, shock, etc., prevent the carrying out of the immersion-treatment in many instances.*

22. *Actual shock is sometimes observed by the advocates of the immersion-treatment, but is usually relieved by prompt stimulation.*

I have, in another paper, alluded to a patient whose temperature went down nine degrees after a bath. So far as statistics show, this case favors the immersion-treatment, yet a glance at the bedside-record will convey exactly the opposite lesson.

23. *We may well doubt the good faith of some who practise immersion in hospitals, but who do not urge it on their private patients.*

24. *The claim that the immersion-treatment expedites convalescence and leaves the heart without the usual post-typhoid weakness, is denied by many physicians who have had charge of patients after their discharge from hospitals.*

In conclusion, let me say that I am not writing to support a theory, nor to assail the advocates of an opposite theory, but to elicit the truth. I am open to conviction and ready to acknowledge an error.

ON THE VALUE OF THE COMPARATIVE METHOD IN THE STUDY OF PATHOLOGY.[1]

BY ROSWELL PARK, A.M., M.D.,
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(Concluded from page 119.)

AMONG the most remarkable phenomena pertaining to cells is the peculiar tendency to reappearance of traits and qualities peculiar to remote ancestors, and quite out of keeping with cells in their present locations. Sutton divides these into *vestigia*, or those affecting whole organs or races, and *degenerations*, or those affecting general groups of tissues. It is the partial reappearance of traits and qualities peculiar to some remote ancestor which we speak of as vestigia. Among these are most prominent, for example, the congenital malformations of the ear and the appearance of rudimentary or additional auricles. In fact, the whole arrangement of the external ear shows atavism toward the type of the carnivora and herbivora, the rudimentary and now useless muscles pointing clearly to the movable ear of those orders. But the human ear points further back than this, and by its development from the remains of the first branchial cleft points distinctly to fish-ancestors and gill-covers, the auricle being the relic of the operculum. Other relics of the opercula appear in the appendages so well described by Sutton as cervical auricles—*i. e.*, the little tags which make their appearance along the anterior border of the sterno-mastoid. That these are not mere freaks is shown by the fragments of cartilage, muscle-fibres, etc., which they contain. These appendages may be cystic or open, forming diverticula to such an extent that fistulous passages may extend clear through to the pharynx, forming the so-called branchial fistulæ.

But it is rather to another aspect of the embryology of the head and neck, especially in its ontogenetic and surgical relations, that I would like for a few moments to invite your attention. Sutton has shown (*Journ. of Anat. and Phys.*, vol. xviii. p. 28, "A Critical Study of Cranial Morphology") that the bony framework of the skull, morphologically considered, is a mere addition to the original primary cranium, which is in reality represented by

the dura. Very early in embryonic life the dura and the skin are in contact, while the basal and lateral portions of the cranium gradually chondrify, thus separating these two structures. We too often forget that the skin and dura are in contact along the various sutures, often for a year after birth, and that this close relation persists longest in the region of the fontanelles and the torcular. The practical bearing of this is that the formation of an intracranial dermoid, by inclusion within the rapidly growing cranium of a few dermal or epiblastic elements, is not difficult to understand. The pedicle of such a cyst or tumor may easily become surrounded by the rapidly forming new bone, in which case the cyst may be entirely covered, or may be with or without some trifling fibrous connection with the overlying scalp.

But of much more importance than this is the original communication between the primary alimentary canal and the central neural canal. Additional facts proving both the anterior and posterior communication of these original canals have only been recently brought to light, and are of sufficient importance to justify some description in this connection. Some fifteen years ago Owen attempted, unsatisfactorily, to show that the gullet of ancestral vertebrates was continuous with the third ventricle, and that the space from the pineal to the pituitary bodies by way of the infundibulum represented this primary gullet. He had, however, been preceded by Dohrn, who thought that the fourth ventricle marked the place where the œsophagus pierces the nervous ring. It has remained, however, for Gaskell and Sutton to show that the tube which now represents the central nervous system in the invertebrates is really the disused segment of the former primary canal. These two scholars, working independently, have arrived at fundamentally the same results. They have profited by Hertwig's investigations, who has shown that the original pleuro-peritoneal cavity is a derivative of the fundamental alimentary canal, arising as two separate diverticula whose central portions persist as the permanent alimentary canal, while the lateral portions coalesce to form a common pleuro-peritoneal chamber. This fact is of no small importance, both from the embryological and the pathological standpoints, since it shows how the cells lining the peritoneum are really of original hypoblastic origin, and that the pleuro-peritoneal cavity is represented in the invertebrates in the so-called gastrula-stage of inversion of the exterior surface.

In the very young embryo we find a fundamental U-shaped tube, from whose anterior branch is developed the alimentary canal, and from whose posterior branch, representing the notochord with its central neural canal, are formed the brain and spinal cord. This tube is lined by a continuous layer of columnar epithelium, and terminates at the cephalic end by a cul-de-sac. The anterior branch is widely open to the yolk-sac, and this becomes connected with the exterior by an epiblastic involution which opens up the cephalic end of the now primary gut; while at the same time a diverticulum, the so-called pouch of Rathke, makes its way in the direction of the cephalic end of the other branch of the original tube, uniting with it, in fact, by an analogous diverticulum produced from the other side, to which I shall recur in a minute. Again, at the caudal extremity there is another involution of the surface, where an opening is established. All that remains of the anterior branch of the primary U-shaped tube between this division and the posterior branch, known as the post-anal gut, is represented in the adult by Luschka's or the coccygeal gland. Occupying the flexure of the tubes is a chain of sympathetic ganglia with branches to each section. The anterior branches ramify in the walls of the bowel and develop intrinsic ganglia and plexuses, with which the names of Auerbach and Meissner are closely associated; while those going to the posterior disappear in its substance, join with groups of nerve-cells developed in the thickness of its walls, and form the gray matter of the spinal cord. In this way certain nerves persist and bring these two systems into close relationship; these are known as the splanchnic. Thus it will be seen that in the dorsal section development is in the direction of nerve-cells, while in the ventral section development is rather into muscle-cells, the two being associated by the splanchnic nerves. The epithelium lining the posterior tube fails to develop; that lining the anterior becomes highly specialized for digestive purposes. Although it may disillusionize some of us, it is, nevertheless, to be stoutly maintained that the canal of the central nervous system is really of intestinal origin, as shown by their original continuity, their similarity in fashion of development, their correspondence in point of time, their close inter-relation through the splanchnic nerves, and by the association of numerous malformations of the central canal of the cord with deformities of the alimentary canal.

What, now, is to be said of the anterior communication of these canals? If one will take the trouble to dissect carefully the macerated sphenoid bone of a six or seven months' fœtus (or younger), he will find it to contain much fibrous tissue, in the midst of which he will detect a small canal that may be entered, sometimes even in the fœtus at birth, by a small probe introduced in a minute recess of the mucous membrane exactly in the middle line of the nasopharynx, close up to the base of the skull. This pocket, often half an inch deep, is known as the bursa pharyngea, and may often be seen in the adult. It marks the pharyn-

geal termination of what is known as the craniopharyngeal canal. It would be noticed much oftener were it not surrounded by a collar of lymphoid tissue, known as the pharyngeal tonsil, corresponding to the collections of lymphoid tissue which mark the site of other obsolete canals. The internal opening of this canal is to be found in the floor of the sella turcica. This is the remains of the diverticulum already alluded to, which has made its way from the cavity produced by the infolding of the integument at the cephalic end of the anterior branch of the original U-shaped tube.

The remains of the other diverticulum, extending anteriorly from the upper end of the posterior branch, are to be seen in the fourth and third ventricles and their communication with the infundibulum. Here, again, the relation of the pituitary body and the so-called pineal gland to this anterior neurenteric communication is most interesting and most important. The structure of the pituitary body is so often likened to that of the thyroid, the thymus, the adrenals, etc., which are all of obscure origin, that anything shedding light in this direction is of great interest. According to this view we must, then, regard the pituitary body as the intracranial lymphoid tissue, which again marks the site of this obsolete canal. I think the investigations of Beard, Gaskell, and Sutton may now be regarded as clearly establishing this fact. Wiedersheim also regards what he calls the pineo-pituitary tract as the primitive mouth-part, archæostoma, or gullet of the ancestors of the vertebrates, the present mouth (neostoma) being an ingrowth, as indicated, between two branchial arches. If in this way the pituitary body can be shown to have, embryologically at least, a more intimate relation with the alimentary system, it may help to shed light where it is much needed—upon the obscure etiology of such a disease as acromegaly.

This brings up also the proper position of the pineal gland, so-called. Within a few years we have been taught that this is the remains of the pineal eye, or that it is to be classed as an original and perhaps rudimentary sense-organ. But later researches have failed to confirm this theory, since it has nowhere been found functional. I may quote a statement from Prof. Woods Hutchinson, nephew of Jonathan Hutchinson, who states in a letter to me:

"I have carefully compared all the plates and representations of this organ and its sections which I could procure, with the result of a decided conviction that all that can be said of this body is that it was an epithelium-lined cavity at some time, communicating both with the surface and the ventricular cavity of the brain; and it has as much the appearance of having been mouth and gullet as eye-bulb and optic nerve. I have also consulted several morphologists upon the question, and they tell me that all one can definitely say is that it is the degenerated remains of an epithelial (cerebral) outgrowth of some description."

(See also editorial by him in THE MEDICAL NEWS, June 6, 1895: "Is the Brain an Appendage of the Alimentary Canal?")

If this view be accepted, a large class of hitherto mysterious processes and lesions is more susceptible of explanation than by any other theory yet devised.

Accepting, then, the pineo-pituitary-infundibular passageway as marking the site of the original anterior communication, let me again refer to the posterior communication between the neural and enteric canals, this being the lower part of the original U-shaped tube already alluded to. Here, first of all, is Luschka's gland, a mass of lymphoid tissue marking the site of the obliterated passage. The first to appreciate the true character of congenital coccygeal tumors and to associate them with this canal was Middledorpf[1]. These tumors, like all others developing from this lymphoid tissue, always assume dermoid characteristics, and are for the most part situated between the rectum and the cæcum, though when large they may make their way into various parts of the pelvis. (For example, I have lately successfully removed one from a man of fifty, which had pushed its way from within entirely out of the pelvis and had raised a conspicuous and tender prominence in the gluteal region, which almost completely disabled him. After removal it weighed four pounds.) These dermoids intrude themselves in all directions within the pelvis, and curious instances are recorded, many of them in the *London Pathological Transactions*. To the same general class belong also most of the congenital coccygeal tumors which figure in the monographs of Calbet[2] and others.

Per contra, equally well-marked dermoid tumors are met with in the original location of the infundibulum, especially in connection with the pituitary body. They have been described also as growing from the body of the sphenoid and projecting into the orbit or in other directions.[3] And the same is true also of the lower end of the infundibular canal, dermoid tumors being often found in the vault of the pharynx; while adenomatous enlargement of the pharyngeal tonsil is extremely common, particularly in children.

The origin of dermoid tumors from this original lymphoid tissue in the neighborhood of obsolete canals has equal interest and importance in considering the embryology of the thyroid body, which arises as a separate diverticulum from the anterior

[1] Virch. Arch., vol. ci. p. 37.

[2] Contribution a l'Etude des Tumeurs Congénitales de la Region Sacro-coccigienne, Paris, 1893.

[3] Lawson: Path. Soc. Trans., vol. xxxv. p. 379.

wall of the pharynx or floor of the mouth. In all but the lowest forms of vertebrates this diverticulum becomes completely shut off, and the duct leading to the developing thyroid is early rendered obsolete. In man it persists for a short time in the embryo, and is known as the thyro-hyoid duct, first described by His. By the time the hyoid bone has developed this duct has divided, that portion above becoming the lingual duct, that below remaining as the thyroid duct. This latter is often known as the *processus pyramidalis*, since it usually contains muscle-tissue, and has been described in most text-books of anatomy as the levator of the thyroid. When either of these ducts persists the fact is usually known by continuous shedding of epithelium, and perhaps discharge of sebaceous material. At times the ducts dilate into cysts of considerable size. Thus, I have recently had occasion to exsect such a cyst, the size of a hen's egg, from the floor of the mouth and base of the tongue in a young woman. The thyro-lingual duct originally opened upon the tongue at the point where now we have the lymphoid tissue known as the lingual tonsil. Along this location dermoids often develop, which may be central, unilateral, or bilateral, the central dermoids appearing, for the most part, as retention-cysts in the original thyro-lingual canal. It is worth while to remind you also that in case of epithelioma developing in this neighborhood the malignant process may extend rapidly down this canal and produce a perforating ulcer of the tongue—a melancholy instance of which recently occurred in a prominent officer of the army medical corps.

The thyroid duct should also completely disappear, but may persist, either as a duct extending from the thyroid isthmus to the hyoid bone, usually surrounded by muscle-tissue; or as a canal obliterated in the main, but presenting interrupted dilated portions—*i. e.*, a series of cysts; or, lastly, it may be represented by a series of detached bodies, known ordinarily as accessory thyroids. These supernumerary thyroids are to be regarded always as the persistent remains of this original passage, and not in any other light. Both in the persistent or obliterated track, as well as in the thyroid body itself, cysts are most prone to develop, varying much in size, contents, rapidity of growth, etc. Some are multiple; some are single. The most interesting of them all are the dermoids, which are intimately related in structure to those dermoids found in connection with Luschka's gland and the post-anal gut. Fifty years ago von Ammon dealt with these in his remarkable treatise, and they have been frequently met with since then.

Another of the obsolete canals in the body to which too little attention is generally paid is that known as the vitello-intestinal duct, which originally connected the yolk-sac outside the embryo with the developing alimentary canal. This occasionally fails to become obliterated as it should, and may then present either as a protruding vascular tumor at the umbilicus or as a form of umbilical and fecal fistula, or as a dermoid located within the abdominal parietes. (I have had occasion within a short time to operate on a young man who had nearly all his life had a discharging sinus from the umbilicus, into which a probe would pass three or four inches. Upon abdominal section, I found a minute external opening connecting interiorly with a good-sized cavity lined with epithelium, and this, again, connecting with the small intestine by a trifling orifice. The extirpation of the sac and the sinus with intestinal suture was sufficient to obviate completely the difficulty.)

Another form of umbilical fistula is that represented by pervious urachus. This is so commonly dealt with in text-books that, beyond reminding one that the urachus may be in part obliterated but presenting cystic dilatation in some portion, or that just at the outlet it may be connected with a dermoid growth, I will not detain you with its consideration.

The subject of branchial fistulæ is also one of great interest. This is now quite thoroughly dealt with in works now before the profession, and need call for but little attention here. Their study and recognition are entirely matters of the present century, for the most part of the latter portion. Heusinger made a most marked advance when, in 1864, he analyzed forty-six examples of the malformation (*Virch. Arch.*, vol. xxix.). These branchial fistulæ are the persistent remains of the original branchial or gullet clefts, and at present persist only among the fishes. They should all be closed long before birth, save only the first, which forms the tympanic or Eustachian canal. When the second remains open, in whole or part, it opens usually between the angle of the jaw and the sterno-mastoid muscle. When the third fails to close, the opening is situated opposite the thyro-hyoid space, close to the sterno-mastoid. The fourth, when open, presents just above the sterno-clavicular junction. This is the more commonly persistent of the three. Internally or within the pharynx these clefts present in the following locations: The second in Rosenmuller's recess, between it and the tonsil; the third and fourth, into the blind canal, called by His the precervical sinus, these being intimately related with the development of the thymus body. Thus the thymus is tissue intimately related to the lymphoid which marks all obsolete passages, the tonsils themselves bearing a very close relation to the second cleft.

These branchial clefts present either as complete fistulæ, external culs-de-sac, internal ditto, or cystic dilatation of intermediate portions, both orifices

being closed. It is now well established that certain pharyngeal diverticula are due to internal blind openings of these clefts. Watson (*Journ. of Anat. and Phys.*, vol. ix. p. 134) has described the most remarkable case on record of this general character. Sutton, moreover, has already made statement that certain of the so-called sebaceous cysts occasionally met with beneath the deep cervical fascia are in reality dermoids arising in persistent branchial remains, and, consequently, analogous to dermoids of the tongue originating in the lingual canal. Harrison Allen has recently thrown much light upon the little masses of glandular or adenoid tissue situated in the fauces, by showing that they are the relics of the second branchial clefts, the pharyngeal tonsil, of course, marking the lower opening of the infundibulum. It might be well just here to digress for an instant to remark that lymphoid tissue thus located, no matter where, about the body, is always peculiarly prone to infection like other degenerated tissues, and that when infected it succumbs most easily to disease. This is conspicuous about the appendix, for instance, where it so frequently leads to disaster. It is commonly seen, moreover, about the tonsils and other tissues scattered about the pharynx.

I should add further in this connection that the congenital fistulæ occasionally met with in the middle line of the neck are not to be confounded with branchial fistulæ, but are to be referred to persistent remains of the thyro-lingual or thyro-hyoid ducts.

There is always a tendency when we start at the top of that which has been growing to credit the growth with the tendency to rise. To judge fairly, however, one should start at the bottom, and begin by ascertaining how many other members of the group studied have taken other directions and partly or completely failed. The higher the place of an organism in the vegetable or animal scale the more restricted are the limits within which it is able to vary or to progress. As Coste has observed, few things are more instructive than the phenomena of blind alleys in evolution—that is, the evolution of certain growths along lines which stop abruptly, as if capacity for further development were wanting. Coste has followed out this line of reasoning in the vegetable kingdom in a very interesting way, but one which takes us too far from our present subject. (*New Science Review*, "Evolution and Teleology," July, 1895, p. 65.)

It often happens that the foliage proceeding from adventitious buds is very different from that of the rest of the plant. This is in accord with the theory of reversion, and these analogies are most common in the lower orders. Bud-formation is chiefly determined by nutritional conditions, and implies always relative excess. That is, the forces resulting in growth are in excess of the forces antagonistic to it.

Even the dreaded tumors may be viewed from the same standpoint as a reversionary process. When animals are hard pressed for existence they appear to become more prolific. This is notably true in the human race, which seems to have the highest degree of fertility where the struggle for existence is the most arduous. In the case of the infectious granulomata, for instance, cells multiply in soil already impoverished, but show inherited weakness by their incapacity for prolonged existence. In the presence of a specific virus of any kind these tissue-cells show a disposition "to be fruitful and multiply," as Hutchinson says, "no matter what comes of it."

Thus reversion to earlier type in the avian and reptilian stage is remarkably shown in our liver-cells, where the tendency so often is to the elimination of nitrogenous materials in the form of uric acid rather than of urea. The wide bearing of this reversionary tendency upon the very common malady known comprehensively as Bright's disease is apparent if we remember that the primary arterial lesions are, in all probability, due to the circulation in the blood of an uric-acid irritant, giving rise to the so-called arterio-capillary fibrosis. It is well known that among bipeds uric acid is eliminated by liver-cells without having undergone metamorphosis into urea, the urine of birds being solid instead of containing excretory material in watery solution. In fact, as Garrod says, "Our gouty patients are a sort of birds."

Certain nervous diseases possess characteristics justifying our regarding them as reversions to certain forms of activity normal in more or less remote ancestors. In the case of goitre, this has been practically established. It is curious, by the way, to note that goitre affects the lower animals almost always in those parts of the world where it is common in man. Horses are most liable; then dogs, calves, and lambs. Cows and sheep are not so liable. Cystic goitre in various small animals, like squirrels, has also been reported.

But perhaps nowhere does reversion or atavism manifest itself more conspicuously or unmistakably than in the mutual convertibility of skin and mucous membrane. The former, being subjected to more modifying influences, of course undergoes more frequent changes. Thus, it furnishes in various animals hair, feathers, bristles, quills, horns, scales, etc.; and in the lower animals it furnishes glands which secrete mucus, milk, poisonous fluids, or fluids loaded with calcium salts, by whose deposition shells or even pearls are formed. Moreover, these characteristics are maintained in dermoid cysts found in these same animals. Thus in sheep they contain wool; in cats, hair; in pigs, bristles; and in birds, feathers. It is well known, moreover, that gray hairs are occasionally met with among the very young. So, also, in young subjects dermoids occasionally, but rarely, contain gray hair.

The mucous membrane has been called "the internal skin." In some respects this is more than a mere happy expression, because from this membrane may be developed many of those structures which we find in or upon the skin. Its most distinctive feature is its epithelial covering, which is ordinarily hypoblastic, but which blends in the buccal cavity, for example, with the infolding of epiblastic epithelium, whose papillæ calcify and form teeth, and from which in many animals there develop hairy patches upon the inside of the cheek. Moreover, sebaceous glands are not confined to the skin, but are large and frequent; *e. g.*, in the mucous membrane of the nymphæ. *Per contra*, mucous glands occur in the skin of reptiles, worms, and fishes. Among the shell-fish the external glands secrete or produce the shell, while in reptiles and birds it is the glands in the oviduct which take on this shell-forming function, producing it rather for the egg than for the parent individual. We also know that calcareous formations are common in the human prostate as well as elsewhere. But it is not alone in those places where the epiblast and the hypoblast meet that such epidermal products are found. If skin and mucosa be really interconvertible, why should we not look for hair in the alimentary canal? And if we do, we are not disappointed, because at least in certain birds there is a curious pyloric plug—filter, as it were—composed of hair. Garrod has shed much light upon the frequency of hairs growing from the mucous membrane. (*Collected Works*, p. 334.)

It is often seen that those structures ordinarily regarded as dermal are not at all necessarily so. Thus, the thick part lining the bird's gizzard is composed of epidermal cells, while pigment occurs in the mouths of many animals and in the vaginæ of many others. Calcareous deposits occur in the human prostate, in the oviducts of birds, reptiles, and monetremes, and upon the outside of many of the invertebrates. Hair is seen in the stomachs of certain birds, upon the eyes and in the mouths of many animals; mucous glands inside the alimentary canal of man, upon the skin of reptiles, fishes, and worms; sebaceous glands ordinarily upon the dermal covering, but as well in the nymphæ of the human female. In the South are met certain blue-gum negroes, so-called because of the excessive deposition of pigment about the gum and palate. Here, too, we have a reversionary or atavistic manifestation.

Thus, again, it will be seen that there is no one characteristic by which we can make a primary distinction between the skin and mucous membrane. Moreover, the old statement that the former is epiblastic and the latter hypoblastic will scarcely suffice, for certainly the conjunctival sac is a typical mucous surface, yet equally certainly it is derived from the epiblast, of which it occasionally shows some more active relic. The atavistic tendency is shown even further in the conversion that can be actually seen upon the surface of a long-extruded hemorrhoid, where the columnar epithelium of the hypoblast becomes metamorphosed into the scaly epithelium of the epiblast.

From all of which follows the corollary which Sutton has been quick to formulate, that a cyst lined with mucous membrane should be as readily admitted into the category of dermoids as one lined with skin, providing that either arise in situations where skin and mucous membrane do not ordinarily occur.

Let me next call your attention to the significance of polymastia, the so-called supernumerary and paramammary breasts, and to the allied topic of gynecomastia. Aristotle refers to the yield of milk from male goats, and Blumenbach described a case in which the animal had to be milked every other day for a year. Isidore St. Hilaire kept for many years in the Jardin des Plantes a large uddered he-goat that freely gave milk. It is well known also that among the Pomeranians, and certain other people as well, the male breast yields milk very often.

Laycock, some years ago, made a suggestion that mammary-gland tissue may make its appearance upon almost any part of the human body. It is known to occur also in ovarian dermoids, while the occurrence of supernumerary breasts in such situations as the perineum would corroborate this statement, as well as the view that the mammæ are essentially nothing but specialized sebaceous glands that may be met, in normal or aberrant condition, in any portion of the skin. It is well known also that nipple-like processes are attached to the skin in many places, and that mammary tissue is found in locations unprovided with ducts. It is likely that this specialized tendency of sebaceous gland-tissue will account for the crops of furuncles which appear occasionally in the axillæ, especially in women, and most commonly about the menstrual period. This is certainly a manifestation of atavism, the atavistic side of it being shown by the abnormal presence of this tissue, while the furunculosis is, of course, to be explained entirely by accidental infection. In animals axillary mammæ are most exceptional, but they are met with in the fruit-bats and in the flying lemur. Schultze finds that in multimastic animals the first mammary rudiment presents as a linear thickening of the epidermis, along a line nearer the dorsal than the ventral surface, in which at various spots lenticular thickenings occur, between which the connecting strands disappear, and from which

[1] There is at least a superstition—how well founded I cannot say—that the bite of a "blue-gum nigger" is peculiarly infectious. This I learn from gentlemen who have practised in the South.

the individual glands are later developed. The domestic cow has normally four well-developed and often two rudimentary teats. The latter may be occasionally so well developed as to yield milk. Other anomalies met with in the cow are disproportion in size of those normally present, or the placing of one or several supernumerary teats always behind the normal ones. In sheep the supernumerary teats are always placed in front of the normal ones. It occurs occasionally in the human species that a supernumerary nipple is placed in or near the middle line, either upon the thorax or the abdomen. This must be regarded as a distinct reversion to the marsupial type, since in the marsupial pouch three nipples are scattered along this line. Williams has done a great service by calling attention especially to the trefoil arrangement of the mammary gland in the human female, and to the important clinical fact that this arrangement is often overlooked by operators, who fail to dissect out during operations for cancer the ultimate portions of this trefoil arrangement, in which later recurrence may consequently more easily occur. The trefoil arrangement is practically a tendency to return to the polymastia of earlier days, and may be regarded as an atavistic polymastia.

But, passing from this interesting topic to a few practical illustrations of the bearing of evolution upon pathology, I must remind you that we often lose sight of the fact that there are changes in the human organism not so very much less striking than those which convert the tadpole into the frog. Aside from those to which I have already called your attention, we see instances in the teeth, the thymus, the breast, the uterus, the skeleton, etc., most of which indicate the possibilities of tissues remaining unchanged for long periods, and then taking on new phases of growth by reversion to a state of embryonic activity. While in the ordinary course of organic evolution cells develop in regular and orderly manner in accordance with inherited tendencies, occasionally they arise at places where they have no business, or at inappropriate times, and then grow to an extent at variance with normal formation. In this way are produced embryonic monsters, and malformations as well as various neoplasms.

Wisdom-teeth are to be regarded as reversions to a form of ancestors having a jaw long enough to contain more teeth, at least five or six molars. The extra incisors which appear at the edges of the premaxillary bone in extreme cases of harelip are also atavistic in character.

The well-known characteristic of so-called Pott's fracture of the fibula has been shown to be largely due to the fact that this bone is a rapidly disappearing relic, which, in fact, in many of the lower animals has already completely disappeared. In the human embryo at the third month the two bones of the leg are equal in size.

Of all the forms of club-foot, that known as equinovarus is the most common. It is the normal position of the foot in the embryo up to the seventh month, and in many of the quadrumana throughout their lives.

The acneal pustules which appear upon the face of adolescents at the period of puberty are, in effect, only atrophied hair-follicles or sebaceous glands endeavoring to produce the hirsute covering of our former ancestry.

It is of interest, also, to know that eczema is by no means confined to the human skin, but that it is one of the common heritages of nearly all living surface-tissues. Woods Hutchinson has shown that its oldest analogue is the exudation of gummy and resinous fluids upon the stems or leaves of plants and trees for the healing of wounds, and protection against fungi and entanglement of insect enemies. Quite analogous also is the outpour of protoplasm from the surface of an amœba, by which it encloses or attaches foreign bodies coming in contact with it. Among certain plants we find a disease which may be regarded as vegetable eczema, particularly in the so-called "apple-scab," which is caused by a distinct fungus (*fusicladium dendriticon*). In the course of this vegetable disease a distinct papular stage is seen, to be followed by an equally distinct horny stage, in which a layer of cork-like tissue is formed. Among tubers a similar disease known as the "potato-scab" is quite common. Among domestic animals mange in dogs, grease in horses, and foot-and-mouth disease in cattle are almost identical with eczema in the human subject, the irritant, however, being a parasite.

Moreover, as Hutchinson has shown, the preference which eczema seems to manifest for flexor surfaces, and especially flexures, is to be explained upon the principle that it is a dermatitis, and naturally occurs where skin is thinner and more delicate, while the irritating effect of perspiration, dust, heat, friction, etc., is more marked in these localities.

But all these facts to which I have called your attention to-night are more or less isolated instances from which great and important truths are yet to be deduced by those who have knowledge comprehensive enough to utilize them. Unfortunately, these men are as yet rare; and one remedy for this condition of affairs which I place before you as deserving of most careful consideration is the formation of a society in which should meet on common ground botanists, agriculturists, vegetable pathologists, biologists, zoölogists, veterinarians, and human pathologists, where all may exchange ideas, and where each may gain by contact with the others that which will add vastly to his own information

and usefulness. Take the case even of the veterinarians, who practise earnestly and zealously and more and more intelligently in a field which, as one might say, is topographically next to ours. How much they know which might be of value to us, and how much we know which they could apply to the greatest possible advantage in their own work, did they but share the knowledge. It seems to me that the formation of some such society for the interchange of knowledge would be of the greatest imaginable help in the direction indicated.

The other essential, as it seems to me, is a carefully prepared work upon comparative pathology, in which should be recorded, collated, and carefully edited the various facts known to the classes of students just enumerated. Such a work must necessarily be of composite character, since probably no man living knows enough in all these various branches to justify his attempting it as an individual task. Even the selection of an editor for such a work would be a difficult task, and would be a high compliment to the man chosen. In the preparation of a book should be enlisted men like Hertig, who writes most entertainingly of the diseases of trees, and men of his stamp, who concern themselves mainly with the vegetable world. Others, again, like Metschnikoff, who have had a training as zoölogists, but who have the deeper insight which permits of the application of their knowledge to the explanation of the problems of humun pathology, should also be enlisted in this great cause. The ablest veterinarians of the world, and those who concern themselves with such problems, for instance, as are presented in this country to the Bureau of Animal Industry, should also contribute; and, finally, their labors and results should be carefully collated and arranged alongside of the facts presented in our ordinary works on general pathology, and this last by an ideal editor, who should combine vast stores of general information with the knowledge of that which would enable this storehouse of facts to be made available and applicable in the recognition and treatment of diseases in the human race. Thus, even the agricultural chemist, the botanist, and the naturalist might combine to produce a work whose value should so far exceed that of any single work now before our profession, as do our present books those published a hundred years ago upon the same subject.

This, then, is my plea to you in closing, that men in various branches of scientific work should get together and make common stock of their knowledge, and that the results of their investigations be presented to the scientific world in some such way as that indicated. There exist to-day no works in any language on comparative pathology. The ideal work to which my longing points would require two, three, or even more volumes,[1] and should be epitomized in condensed form, which could be placed in the hands of every second-year student, and upon which he should be fed, as it were, from the beginning of his second year until after his graduation, when the larger one should be in his hands until he has familiarized himself with its contents. When this happy condition of affairs is brought about, we shall have men in our profession who are liberally educated, shining in the light of a knowledge which, after all, would be focussed upon the problems of disease in man; and, then, and I fear not until then, can medicine claim the title and privilege of being really liberal.

> There are great truths that pitch their shining tents
> Outside our walls, and though but dimly seen
> In the gray dawn, they will be manifest
> When the light widens into perfect day.
>
> LONGFELLOW (*Michael Angelo*).

IN WHAT MANNER CAN ULCERATIONS OF THE NASAL SEPTUM FOLLOWING OPERATION AND IN ATROPHIC RHINITIS BE HEALED TO SECURE AN EVEN AND MOIST SURFACE?[2]

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THE consideration of such a topic as this may, to the casual observer, seem unimportant. At first thought it would appear sufficient to be able to heal ulcerations on the nasal partition in any manner, but we all know how important it is to repair nasal ulcerations and obtain a cicatricial surface which will not accumulate secretions. Retained nasal secretions upon the septum, besides being a cause of obstruction and general annoyance, eventually lead to secondary ulceration.

This paper will necessarily be short, since the treatment which will be advocated is very simple and can be quickly stated. We may, for convenience, classify ulcerations of the nasal septum into two large divisions—first, those resulting from operations, and, second, those appearing as a stage of some one of the several varieties of inflammation of the nasal passages. Perhaps it would be wise to exclude the ulcerative stages of syphilis, lupus, and tuberculosis, because the treatment of these is largely constitutional, although in these diseases ulcerations require careful local attention. First, let us speak of ulcerations on the nasal septum caused by operative procedure. It would be well to say at the outset that the more nearly normal

[1] A new work of promising character in this direction is announced by Lubarsch and Ostertag (*Allg. Path. und Path. Anat. des Menschen und der Thiere.*).

[2] Read before the Laryngological Section, New York Academy of Medicine, January 22, 1896.

from the standpoint of healthfulness the nasal passages are, the quicker will the nasal tissues recover after operation. But little need be said in regard to the healing of ulcerations on the *turbinated* side of the nose, for cleanliness, disinfection, and perhaps occasional stimulation will do all that is necessary in a healthy patient. Ulcerations on the septum produced by operations will heal much more quickly and with a much fresher cicatrix in moist hypertrophic conditions than in atrophic disorders. The difficulty lies chiefly in the treatment of ulcerations where the septum is dry, atrophied, and presents more or less irregularity of surface. We note, too, a difference in the behavior of ulcerations following the different methods which are employed to reduce the thickness of the nasal septum. It has long seemed to me that the use of the galvano-cautery upon the nasal partition should not be encouraged. I am not in the habit of using it except over very limited surfaces, as, for instance, upon a small projection of cartilage, too small to require the use of saw or trephine. We occasionally find, too, an œdematous, boggy condition of the soft tissues of the septum where a very limited application of the galvano-cautery may be employed instead of the mineral acids. The use of the galvano-cautery over an extensive surface, to remove deviations of the septum or ecchondroses, as a whole, should be deprecated, because it seems to reduce the vitality of the septum very much, and ulcerations so produced are difficult to heal in a way to secure a moist cicatrix. Tissues are removed much more scientifically by some method of excision. We may be excused for briefly mentioning what we believe to be the best way of treating ulcerations after operation to avoid sepsis. We believe that it will be found very rarely necessary to introduce any plug or tampon in the nostrils to arrest hemorrhage. Bleeding almost always ceases spontaneously. I make it my routine practice to have the patient blow the nose very thoroughly after the bleeding has nearly stopped, in order to remove any small pieces of tissue or any foreign body, and then cover the wound with boric acid and compound stearate of zinc. It is not well to wash out the nostrils by post-nasal irrigation until the second or possibly the third day after the cutting. In my experience danger of sepsis is usually past by that time.

Now as to the best method of treating operative ulcerations during the first week. I believe there may be honest differences of opinion entertained. I instruct patients to return the second or third day after operation, but occasionally, when they have not called for a week or ten days, I have been surprised to see how well the wound has progressed in healing, and sometimes without even antiseptic washing. I know that the behavior of the wound depends largely upon the general condition of the nose. Such wounds would not progress favorably without proper cleansing in atrophic cases. In such conditions we cannot do less than employ post-nasal irrigation and general oiling of the surfaces, but in comparatively healthy nostrils it is a question whether wounds upon the nasal septum do not progress as favorably if left untouched for at least ten days. Cicatrization necessarily takes place beneath the protection of the scab and the overlying secretions which catch upon it. If we could wash off all dirt and dust and overlying secretions and leave the thin scab alone over the ulceration, probably the best course would be followed; but this is a difficult thing to do, and the constant rubbing off of the scab, and the uncovering of the wound produce an irritable ulcer, which repairs itself with tissue further removed from a healthy structure than when the ulcerations are left untreated or washed in the simplest manner. If we could treat ulcerations on the nasal septum as we do those on the surface of the body, by the protection of antiseptic coverings, we should probably secure a moist, even surface not unlike the surrounding healthy mucous membrane; but in the nose it is impossible.

Different methods must necessarily be employed to fill in an excavated ulceration and bring it flush with the surrounding surface. I believe the tendency of a nasal ulceration to deepen until in some cases there seems to be danger of perforation occurs more frequently after the use of the galvano-cautery than following excision. I presume we all see ulcerations on the nasal septum after operation which need to be treated diligently in order to prevent perforation. Daily application of such stimulants as nitrate of silver, zinc, balsam Peru, or the use of such powders as aristol and iodol will be found necessary to force the ulcerated surface to granulate. On the other hand, we sometimes, in a narrow nostril, where we are anxious to obtain all the breathing-space possible, are annoyed by the tendency toward overgranulation, and it becomes necessary to excise granulation-tissue many times before we can secure an even surface.

But the greatest difficulty is not so much in making the surface even as it is in obtaining a cicatrix which is smooth, and, more important still, one which is moist. If we cannot secure this, the benefit derived from the operation which we have undertaken is compromised, and the patient does not obtain the relief which we have promised or which he expected.

I have said before that the difficulty of obtaining a moist cicatrix is greater where the galvano-cautery is used, and I also think that the application of the mineral astringents to ulcerations tends to produce a thicker and dryer cicatrix. I believe that apart from cleansing, ulcerations should be handled as little as possible until the surfaces are even with the

adjacent tissues, and then much can be accomplished by the employment of friction with certain mild disinfectants, in removing the granular surface that is left after the healing of an ulcer, and in making it hard, slippery, and moist.

Now let us speak of the ulcerations occurring in atrophic rhinitis. We meet with all stages of this disease, and perhaps a day does not pass that we do not see numbers of small ulcerations on the cartilaginous septum in children and adults who are suffering from atrophic nasal disorder. These are the patients who are annoyed by the retention of scabby secretions upon the nasal septum and oft-repeated nose-bleeds. Antiseptic irrigation with Seiler's solution or with some stronger disinfectant, and oiling, need to be employed. Great improvement can be secured by these simple measures, but to heal the many small ulcerations and obtain an even, moist surface, more needs to be done. We commonly find the collection of dried secretions just in front of some prominence on the septum, or in the large convexity of a deviated septum. It is superfluous to say that the proper methods should be employed to reduce large prominences and to correct the deep concavities of a nasal partition bent upon itself. It is important even to level down small prominences on the cartilaginous septum in order to prevent the retention of secretions in front of them, even when it is not necessary to obtain greater breathing-space. For many years I was in the habit of coaxing these small ulcerations to heal by the application of the so-called stimulants—nitrate of silver, perhaps, being used more than any other. We know that it is even advocated that, in case an ulceration on the septum refuses to heal, it should be burned by the galvano-cautery, in order to change the character of the inflammation. I do not find, however, that such treatment secures in the cicatrix anything but more or less irregular, granular, and dried surfaces, upon which the secretions collect and become dried crusts.

A good while ago, and I believe at first it was in those cases of epistaxis occurring in young adults, who had small ulcerations upon the cartilaginous nasal septum, with a general unevenness of the surface, the entire nasal passage being in a state of beginning atrophic rhinitis—I found that I obtained better results by *rubbing the ulcerations thoroughly* than by the coaxing treatment of stimulants. I was in the habit of introducing a cotton-carrier, and with a small hard pledget of cotton moistened with listerine I rubbed the several ulcerations rather forcibly and for a few seconds at a time. This at first produced bleeding from the superficial ulcerations, but continuing with the rubbing the bleeding was stopped, and not only the ulceration itself, but the adjacent tissues seemed to take on a healthier condition, which resulted in quick healing. I think latterly I have used borolyptol more than anything else, and with better results, and I am in the habit, so soon as the ulcerations following operative work become even with the surrounding tissues, of, we might say, polishing the surface by antiseptic friction applied every two or three days for two or three weeks. The result has been to secure a whiter cicatrix, and one which is smooth and much more moist than the surface of the usual cicatrix. In atrophic rhinitis small prominences of the septum can be rubbed down in this way alone, and I am certain that superficial bloodvessels which easily and continually bleed can be destroyed in this manner, and the small ulcerations healed with an even, moist surface.

I am not positive that it is necessary to use any special medicament, but believe the best are those represented by such cleansing medicines as listerine and borolyptol. *The friction with moist cotton is the important part of the treatment.* I have found, too, that by this procedure it is possible to exhaust certain forms of nervous irritability of the nostrils. I have employed it lately in a case of nasal hydrorrhœa occurring in a nervous woman, who was very much annoyed by constant fits of sneezing and copious transudation of watery fluids from the nose. Friction on the nasal septum was at first unpleasant, and provoked sneezing and stoppage of the nose; but after it had been continued for a week the nostrils became much more tolerant, and the discharges were very much diminished. I believe it to be possible to destroy the over-sensitiveness of peripheral nervous filaments in this way, and to control many of the annoying vasomotor disturbances which are frequently seen in the nostrils.

The points which I would advance, then, are the following:

1. That ulcerations on the nasal septum produced by operative work repair themselves promptly and with an even, moist cicatrix, just in proportion to the degree of general healthfulness of the nasal mucous membrane which exists; much better in hypertrophic than in atrophic conditions.

2. Ulcerations produced by the galvano-cautery do not heal in so favorable a manner as those caused by excision.

3. In healthy nostrils little beyond antiseptic irrigation should be done in the treatment of operative ulcerations until they are even with the surrounding tissues; then the surface should be rubbed forcibly with an appropriate antiseptic stimulant, such as borolyptol or listerine, until the surface of the cicatrix is smooth and moist.

4. This same frictional treatment should be used to heal the multiple small ulcerations in atrophic rhinitis, and to level and make moist the cartilaginous surface, and so prevent the accumulation of dried secretions.

5. Extreme irritability of the nasal passages, as evinced by paroxysms of sneezing, frequent spasmodic closure of one or both nostrils, abundant transudation of watery fluids, etc., can often be relieved by rubbing the septum and anterior turbinated in the manner described.

CLINICAL MEMORANDA.

NERVE-GRAFTING OR TRANSPLANTATION FOR PARALYSIS RESULTING FROM INJURY TO THE MUSCULO-SPIRAL.[1]

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I. W., private, Troop "B," Tenth Cavalry, stationed at Fort Custer, Montana, by a fall from his horse on April 11, 1895, fractured his right humerus at about the junction of the upper and middle thirds.

The case was seen by the writer a few days after the injury was sustained, through the courtesy of Captain Egan, at that time post surgeon at the post. The fracture was oblique, involving probably about two and one-half inches of the shaft, extending from without, downward, inward, and forward. It was complicated from the first by paralysis of the extensors of the forearm, the characteristic "wrist-drop" of musculo-spiral paralysis. Loss of function of the group of muscles supplied by this nerve seemed complete. The fracture healed promptly under appropriate dressings, with good union, no deformity, and little or no shortening.

The paralysis persisted, and up to the time the case came under my care, about May 20th, had not improved with massage and battery treatment.

At this time the muscles of the whole arm were atrophied from disuse; muscular excitability of the forearm-extensor group could be elicited by percussion and a slowly interrupted galvanic current. Until operation these muscles were given electrical stimulation three or four times weekly, with no perceptible improvement.

After much difficulty in gaining the consent of the patient, operation was performed June 22, 1895, with the assistance of Assistant Surgeon Kennedy, U. S. Army.

A medium-sized dog was secured, and under anæsthesia his sciatic nerve was antiseptically isolated and left in situ surrounded by warm sterilized gauze; the operation was then begun by a three-inch incision over the depression between the biceps and triceps muscles, and the nerve found with no difficulty in the musculo-spiral groove. It had been thought that rupture had been complete; but the nerve was continuous, having at the seat of injury a hard nodular enlargement apparently involving the whole trunk, about one centimetre in diameter and two centimetres in length. This, and the nerve itself on either side for some distance, were intimately adherent to the callus, and dissected loose only with much difficulty; the line of fracture corresponded to the nodule.

After mature deliberation it seemed advisable to remove the tumor, which was done, provisional sutures being first introduced, so as easily to control the two ends for further manipulation. Efforts were then made to bring the ends into approximation by stretching, but the space was too great; about three centimetres had been removed, and the retraction of the two ends about doubled this distance.

A section of the previously prepared nerve of the dog, five centimetres in length, was carefully sutured in place with fine catgut, there being no traction on the sutures when the approximation was completed. The wound was then closed and dressed. Modern surgical methods were strictly observed throughout.

The recovery from operation was perfect; union took place by first intention; there was no pain, no fever, nothing abnormal.

During the next four weeks he received faradic treatment to the muscles involved three or four times a week. Because of changes of station he passed from observation late in July. Recent information from Major Shannon, Surgeon U. S. Army, who relieved the writer at Fort Custer, states that there being no improvement observed, he was finally discharged from the service for disability.

The time between operation and discharge was too short to decide fairly as to whether or not function would have been ultimately restored, and the operation physiologically successful. The writer thought that sensation was returning before four weeks had elapsed, and believed that the prognosis was favorable.

It is to be regretted that the case could not have been kept under observation for five or six months at least.

The section removed was examined by Major Reed, Surgeon U. S. Army, Curator of the Army Medical Museum, and he has kindly made the following report:

"Referring to my letter of July 15th, concerning the tumor of musculo-spiral nerve removed from a soldier, I beg to submit a further report of the microscopical examination.

"Its general structure is that of a soft fibroma, moderately rich in cells. In the middle part of the section there are seen cross-sections of four nerve-bundles. Within the bundles no nerve-fibrils are to be made out, their place being taken by a connective tissue fairly rich in cells.

"At one margin of the section there are seen cross-sections of five other small nerve-bundles. While in two of these bundles no cross-sections of nerve-fibrils are to be made out, in the other three one can still see, here and there, fibrils with normal-staining axis-cylinders; in other words, the section shows a marked hypertrophy of both the perineum and endoneurium of the nerve-bundles, and hence the tumor might properly be designated as a traumatic fibro-neuroma."

Efforts to find the patient so as to procure a later report have been unavailing.

The subject of nerve-suturing, etc., has been carefully gone over by Dr. Willard, of Philadelphia, in an excellent paper appearing in THE MEDICAL NEWS, October 6, 1894.

He mentions several cases of nerve-grafting with varying results; his conclusions, however, are that when the loss of nerve-substance is large nerve-grafting will usually give better results than the splice-operation of splitting and turning the nerve-flaps into the gap.

[1] Published by authority of the Surgeon-General U. S. Army.

REPORT OF A CASE OF ŒDEMA OF THE GLOTTIS, FOLLOWING SCARLET FEVER.

BY JOHN GRAHAM, M.D.,
OF PHILADELPHIA.

CASES of œdema of the glottis, especially in children, are sufficiently rare to justify me in reporting the following case:

On November 4th I was called to see Annie H., and found her suffering from an attack of scarlet fever of moderate severity. She was put to bed, her diet regulated, and bowels kept open daily. Her throat, which was red and swollen, but free from false membrane, was sprayed with an atomizer containing Dobell's solution.

On November 10th she was convalescent, and I ceased my visits, giving the usual directions in regard to diet, avoidance of exposure, and pointing out the chief symptoms that indicate the coming on of albuminuria.

On the night of December 1st, three weeks after my last visit, I was called in haste, and found the child suffering from marked dyspnœa. She was sitting up in bed, making long, but not loud, sounding inspirations. There was marked supra- and infra-clavicular retractions with each inspiration. There was no cyanosis, but the child looked pale and anxious.

The lungs gave forth a clear sound on percussion, and there was an almost total loss of vesicular murmur, but no râles. There was not, and had not been, any croupy or loud cough.

The mother informed me that our patient had been taken suddenly ill, with difficult breathing, a few hours before my arrival; that up to that time she had continued to improve since my last visit, excepting that for one week past she had lost her voice, and could speak only in a whisper; and that for the past twenty-four hours the child had passed only a few drops of urine. The mother had fortunately saved the small amount voided, and on testing it with heat and nitric acid it showed a large amount of albumin present. The patient's temperature was 99°. There was no dropsy of the face, feet, or legs.

By a poor light, and using a spoon for a tongue-depressor, I examined the throat, with negative results. There was no false membrane in sight. I could see the tip of the epiglottis, but could not see the glottis. I saw no swelling or redness. I did not attempt to examine the glottis with my finger to find if it were swollen, because such an examination would have increased the dyspnœa. I had no mouth-gag to protect me from the child's teeth, and only an expert can derive positive information from such touch; but lastly, and for the most important reason, the absence of such swelling would be only negative evidence, for so-called œdema of the glottis in most cases is really œdema of the larynx, and there may be but little swelling of the glottis.

My diagnosis at the time was probable œdema of the glottis, and the subsequent history of the case, I think, clearly proved it correct.

I explained to the mother that her child was suffering from a disease similar to membranous croup, and that, to give time for our medicines to act, it might be necessary to perform tracheotomy to save the child from smothering.

I ordered pulv. jalapæ com. ʒj to be given to the child in divided doses, the entire amount to be taken inside of one hour; tincture of digitalis, 5 drops every three hours; and a mixture containing 2 grains of carbonate of ammonium and 10 m. of syr. senegæ every two hours. The diet to consist of milk, in as large quantities as the child could take without producing vomiting, and to use whiskey in the milk should symptoms of exhaustion come on.

This treatment was followed in six or eight hours by copious watery evacuations from the bowels and a free action of the kidneys, and coincident with these discharges the dyspnœa began to abate, and our patient steadily improved until December 7th, when the albumin had entirely disappeared from the urine.

With the disappearance of the albuminuria the child's voice returned clear and strong, showing that this symptom, which had existed for one week before my first visit, had been probably caused by œdema.

No false membrane was ever seen in the throat or expectorated.

From the time dyspnœa abated, and for one week after, the child expectorated, with slight cough, a quantity of thin, watery mucus, streaked with blood, averaging a teaspoonful at each expectoration. She complained of no pain in the throat, and there were no mucous râles in the lungs at any time during the illness.

To recapitulate the symptoms on which I based my diagnosis—

1. A cause for the œdema—albuminuria.
2. The absence of false membrane at the beginning and throughout the attack.
3. No croupy or metallic cough, and almost normal temperature—never above 99°.
4. Dyspnœa on inspiration, and not noticeable on expiration. True croup shows dyspnœa on inspiration and expiration.
5. The result of treatment.
6. The characteristic expectoration following the abatement of the dyspnœa.

MEDICAL PROGRESS.

Hysterical Hemianopsia in a Case of Epilepsy after Trephining.— At the recent Congress of French Alienists and Neurologists, LANNOIS (*Mercredi Médical*, 1895, No. 52, p. 615) reported the case of a man who developed attacks of focal epilepsy after trephining for the removal of fragments of bone broken by a blow upon the right side of the head by a leaden cane. After a series of convulsive attacks the man presented hemianopsia, with profound anæsthesia and loss of the muscular sense upon the left side. After a time the anæsthesia became segmental and disappeared suddenly in the course of an electrical séance, the hemianopsia being at the same time replaced by a narrowing of the visual fields.

Syphilitic Pneumonia.—At a meeting of the Moscow Dermatological Society, POSPELOW and KONTRIM (*Monatsh. für prakt. Dermatologie*, 1895, No. 12, p. 644) each reported two cases of syphilitic pneumonia that yielded to treatment with mercurials. Hæmoptysis occurred in three of the cases, and fever with sweating was present in two. The lesion was localized to the apices. In one of the cases tubercle-bacilli were found in the sputum, and the process was believed to be tuberculous. Treat-

ment with mercurial inunctions and sulphur-baths, with a residence in Egypt, was followed by general improvement and disappearance of fever, cough, and expectoration. The patient had been well for three years at the time of the report. In this case it is believed that the tuberculous affection was implanted upon the syphilitic pneumonia, disappearing with the latter.

Two Primary Carcinomata in the Same Individual.—At a recent meeting of the Berlin Medical Society Israel (*Berliner klinische Wochenschrift*, 1896, No. 2, p. 45) reported the case of a woman, fifty years old, who came under observation on account of gall-stones, for the relief of which the gall-bladder was incised and its walls attached to the abdominal wall and fifteen concretions evacuated. Death took place suddenly several days after the operation as a result of heart-failure, which upon post-mortem examination was found to be due to mitral stenosis. In the wall of the gall-bladder was found a large area of ulceration surrounded by thickening of the adjacent tissue. Microscopic examination disclosed the histologic structure of a cylinder-cell carcinoma in places scirrhous. The cystic duct contained a polyhedric stone of cholesterin. The head of the pancreas was further found to contain a cancroid tumor as large as a hen's egg. The retroperitoneal glands presented secondary involvement of cylinder-cell character.

The Correction of Wandering Spleen by Splenopexy.—As the result of a study of the physiologic functions of the spleen in conjunction with an experimental investigation, Sykoff (*Archiv für klinische Chirurgie*, Band li. Heft 3, p. 637) concludes that extirpation of the spleen under otherwise favorable conditions is only successfully possible when the remaining blood-forming organs are in a normal state. When local affections of the spleen exist resection is to be undertaken in preference to splenectomy. Splenectomy is indicated when the pathological alteration of the spleen is not secondary but primary, and capable of further extension throughout the organism; and when it cannot be hoped that the pathologically affected spleen (however slight the involvement may be) will perform its physiologic function. A wandering spleen should be fixed in position. For this purpose catgut-sutures will answer admirably. The organ thus attached diminishes in volume—an advantage if it be hypertrophied. In case of anterior displacement of the spleen an attempt should be made to return the organ to its proper place and fix it there.

Successful Cœliotomy in a Case of Obstinate Dysentery.—At a recent meeting of the Medical Society of Amsterdam Stephan (*Berliner klinische Wochenschrift*, 1896, No. 1, p. 21) presented a man, twenty-six years old, who, eight weeks before coming under observation, was seized with fever and looseness of the bowels, the intestinal evacuations containing blood and pus. The condition thus continued, the patient losing flesh and growing anæmic. There was some tenesmus, but the abdomen was only slightly distended. Upon palpation a painful band was appreciated in the left side of the lower portion of the abdomen. There was irregular slight elevation of temperature. In the diagnosis tuberculosis, syphilis, and carcinoma were excluded and dysentery decided upon. The use of many different drugs directed to the treatment of the condition named last was unattended with successful results. It was therefore finally determined to perform cœliotomy and establish an artificial anus. Through this opening local treatment by means of an emulsion of bismuth, with later tannic acid, and ultimately silver nitrate was instituted. Improvement soon set in, and in the course of a few months it became possible to close the artificial anus.

THERAPEUTIC NOTES.

In the Treatment of Frostbite, Montmollin (*Rev. Méd. de la Suisse Rom.*, 1895, No. 12) has employed successfully baths of the affected parts of from fifteen to thirty minutes' duration, four times daily, in a centesimal solution of tannic acid, together with baths twice daily for fifteen minutes in soap-water.

For Bronchitis in the Aged.—Take of

Benzoic acid	5 grains.
Tannic acid	2½ " —M.

Make into a cachet. Dose: Take four or five in the day.—Maragliano, *Gaz. Hebd. de Méd., etc.*, 1896, No. 1.

To Prevent Iodism from the use of potassium iodide, Spencer (*Jahrb. f. prakt. Méd.*, 1895) employs the following formula:

Take of

Potassium iodide	℥j.
Iron and ammonium citrate	℥j.
Tincture of nux vomica	f℥ij.
Distilled water	f℥j.

Compound tincture of cinchona to make f℥iv.—M.

Dose: A teaspoonful three times a day in water after meals.—*Monatsh. f. Derm.*, 1896, No. 1.

For Dry Pharyngitis.—

℞.—Acid. carbolic.	gr. iv.
Tinct. iodi	♏v.
Tinct. aloes	♏viij.
Tinct. opii	gtt. x.
Glycerini	f℥j.—M.

S.—Use as a spray several times daily.—Danet, *Progrès Médical*, No. 51.

The Treatment of Epilepsy with a Combination of Potassium Bromide, Adonis Vernalis, and Codein.—As the result of a rather extended clinical study of the utility of a combination of potassium bromide, adonis vernalis, and codein in the treatment of epilepsy, Taty (*Lyons Médical*, 1895, No. 12; 1896, Nos. 1, 2) arrived at the conclusion that the addition of codein is not an advantage, as to this must be attributed the resulting constipation and somnolence, while bromism is thus not avoided. The adonis acts as a stimulant to the heart and increases the flow of urine, although it does not prevent the hebetude or the attacks.

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OF MEDICAL SCIENCE.

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THE TRANSFER OF THE MEDICAL NEWS.

THE management of THE MEDICAL NEWS has reason to be flattered with the discussion which has arisen over its transfer from Philadelphia to New York, and with the degree to which gentlemen, apparently not concerned in the subject, have taxed their ingenuity in inventing causes to account for it. The matter would seem to be so simple as to be self-evident. THE NEWS has never been a mere local journal. Large outlays and unremitting labor have been lavished on it to obtain and maintain for it a national and even cosmopolitan position. These efforts have been crowned with success. Wherever the English language is read THE NEWS is recognized as an organ of the profession at large and not of that of a single city or State. It has welcomed and has been favored with contributions from every part of the country and of the civilized world. Its subscription list is equally extensive, and of recent years it probably has had as many readers in New York as in Philadelphia. If Philadelphia has supported it generously with contributions and subscriptions, so have New York and Boston and Cincinnati and Chicago and all other centres of professional activity, and it has sought to recognize this favor by payment to contributors, the only medical periodical, we believe, in the English language that makes it a rule to do so, with the exception of the *American Journal of the Medical Sciences*.

When, therefore, the increasing business of the publishers rendered it expedient for them to open a branch of their establishment in New York, in order that the authors, whose works they have the honor to publish, should have the benefit of the business facilities of both cities, it was natural that they should transfer one of their periodicals. The selection fell on THE NEWS, because, as partaking of the character of a medical newspaper, the concentration of activity in New York seemed to offer greater opportunities to it than to the *American Journal of the Medical Sciences*. Whether its office be in one city or the other, it will expect to receive, as heretofore, the support of the profession at large, and if, as its managers anticipate, the business advantages of New York shall enable it to acquire a wider sphere of influence, it will be able to offer to its readers an increased store of information, and to its contributors a larger opportunity of disseminating their views throughout the world.

THE DANGER OF SEPSIS IN ENDERMATIC INJECTION (INFILTRATION-ANÆSTHESIA).

THE growing popularity of infiltration-anæsthesia since its discovery in 1891 by Schleich, of Berlin, and subsequent introduction into Germany and America one and a half years ago, makes it necessary to sound a note of warning regarding its indiscriminate use without proper care as to the technique. The only substantial objection to this form of local anæsthesia that has been raised is that of the possibility of infection from septic fluids, unclean hands or instruments.

There are certainly many physicians who either do not clean their hypodermatic syringes, or simply wipe them off and then go to the next patient. It is not customary to make special preparation of the skin or of the hypodermatic needle for ordinary hypodermatic injection. Even the fluid in which to dissolve the morphine, the cocaine, or other tablet, is not always drawn from an aseptic source. Moreover, the small amount of serum which clings to the needle on withdrawal is certainly a culture-medium for the streptococcus, and becomes a fruitful source of inoculation for the succeeding patient.

It is remarkable that we see or hear but little of hypodermatic abscess, which, despite septic injection, must be an uncommon occurrence. We can only ascribe this to the fact that in hypodermatic injection the fluid is deposited in a comparatively compact depot under the skin. It therefore does not readily diffuse itself into the tissue, and thus permits of rapid phagocytosis.

Quite different is endermatic injection; for when fluid is slowly infiltrated into the tissues it distends the meshes, replacing the fluids and the blood entirely for a length of time (ten to twenty minutes). The infiltrating fluid is brought intimately into relation with the cellular elements, and phagocytosis does not obtain in time to counteract the effect of implantation of septic germs which can thus gain a foothold, and more certainly cause suppuration than in ordinary hypodermatic injection.

A case of sloughing has been brought to the writer's notice in which the Schleich method was used for anæsthesia in operation for mammary abscess. The infiltration-fluid was prepared by a local druggist; the infiltration was made by the physician with a hypodermatic syringe and needle used for ordinary medicinal injection. "Anæsthesia was complete, but operation was followed by sloughing of the whole surface of the skin injected."

Schleich does not report any such accident at his hands. Nor has Würdemann met with a single case of the kind in his practice, although he reports several hundred injections. Reports coming from other surgeons do not chronicle such immunity, which can only be the fault of the operator. Schleich has pointed out in his brochure and in his other writings that absolute sterilization of everything in connection with the procedure should obtain. Würdemann insists that to insure uniform success it is important to apply scrupulously the following rules: I. The ingredients of the solution should be made absolutely sterile. This may only be obtained by *boiling all the solutions for five minutes before each operation* (afterward cooling same). This factor is especially pertinent, as several leading American and European manufacturing chemists have infiltration-tablets on the market for extemporaneous preparation of the several fluids. The tablets themselves are presumably aseptic, but if fingered ever so slightly cannot remain pure. *Boiling the solutions after mixing does not interfere with their anæsthetic qualities.* II. The bottles containing the solutions and all receptacles for the fluid should be previously boiled (or sterilized by heat), and not suffered to remain exposed to contaminating influences, not even the air, but should be covered after cooling.

It is even more necessary for instruments to be aseptic than for ordinary operations. Any good hypodermatic syringe and needle may be used, but should be previously prepared by immersion for at least one-half hour in a 5 per cent. carbolic solution, which may be removed before operation by washing in sterilized water. The finest and sharpest of needles are advisable. These may be sterilized by boiling in soda solution or by carbolic immersion.

The person preparing the solution as well as the surgeon should prepare his hands as carefully as if for an abdominal operation. The part to be operated upon should be made aseptic in the usual manner. Attention to detail is absolutely necessary for the success of healing as well as for anæsthesia.

This is such a valuable method of anæsthesia and is receiving such wide application in the hands of our best operators that for the benefit of those not familiar with the procedure we append the following bibliography:

Schleich, A.: 1. Verhandlungen der Berliner Medicinischen Gesellschaft, 1891. 2. Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1892. 3. Berliner klinische Wochenschrift, 1892. 4. Schmerlose Operationen Monograph, Berlin, 1894.

Van Hook W.: 5. The Value of Infiltration-anæsthesia. THE MEDICAL NEWS, November 16, 1895.

Würdemann, H. V.: 6. "Explanation and Demonstration of the Infiltration (Schleich) Method of Anæsthesia. Journ. Amer. Med. Assoc., December 29, 1894. 7. "The Infiltration Method of Anæsthesia in Ophthalmic Practice." Journ. Amer. Med Assoc., November 16, 1895.

THE STATE CARE ACT.

By the approval of the Mayor and the signature of the Governor the Act of the Legislature transferring the insane of the county of New York to the State, the "State Care Act," goes into full effect. All the dependent insane of all the counties will henceforth be supported by the State in the State Hospitals. This Act adds 7329 to the number of the insane in State care, making a grand total of upward of 20,000. The transferrence of the insane of this county to the care and support of the State will prove a great benefit to the taxpayers of this city. It will lighten the burdens of taxation to the extent of more than $1,500,000 annually, but it remains to be seen how the people of the State will regard the heavy burden which

is imposed upon them by the Legislature. The State Comptroller estimates that the pauper insane will be a tax upon the State beginning with $1,000,000 annually, and the cost will steadily increase as the number of these dependents increases. Of this fact, however, we are well assured, viz., the insane in the institutions of this city are to be greatly benefited by the change. The wretched and incompetent management of the asylums of New York had rendered them little else than institutions for the conversion of the acute into the chronic insane.

THE LIBRARY OF THE NEW YORK ACADEMY.

THE library of the Academy of Medicine of this city has become a permanent institution of which the citizens may well be proud. It has passed the period of random growth and is now enlarging on a well-constructed plan, which is destined to make it one of the most complete medical libraries of the world. As a working library for medical and surgical writers it is now scarcely inferior to the Surgeon-General's Library at Washington. The Council of the Academy has always shown a most commendable liberality in sustaining the library. But, like all libraries, its future growth and usefulness depend upon a permanent endowment fund, which shall enable its managers to meet every prospective emergency. An effort to meet this want is about to be made, largely through the influence of the President, Dr. Bryant, which we trust will be eminently successful. The committee of twenty-five, whose appointment was noticed in our previous issue, have already begun work.

ECHOES AND NEWS.

DR. JOHN H. HUBER, Coroner's physician, has sent in his resignation. There are already fifteen applications for the place with Coroner Hoeber.

THE will of the late Dr. Robert G. Remsen, as filed in the Surrogate's office, shows that Dr. Remsen left personal property valued at $1,000,000 and real estate of the value of $150,000.

THE mortality of the State of New York is a trifle higher for 1895 than in 1894. The rate is stated as 19 per 1000 of population. Typhoid fever and diphtheria claimed 1270 and 5000 victims, respectively.

THE Board of Managers of the new Manhattan State Hospital—the new name of the New York City Asylum—are soon to be appointed by Governor Morton. The new Board is to consist of seven members, two of whom shall be women.

TWO butter-makers and the son of Allen Devereaux, whose tuberculous herd of dairy cows was recently destroyed, have contracted the disease. As all were large partakers of the diseased milk, there can be little doubt as to the source as well as the method of their infection.

ALTHOUGH there are several factories in the vicinity of New York devoted to the preparation of horse-meat for food, it is comfortable to be reassured by the chemist of the Board of Health that not an ounce of it is sold in this city unless it be in the shape of imported sausage. It is also stated by these authorities that the flesh of the horse is easily detected by the usual iodine-test for starch, which it contains in contradistinction from all other butchers' meat.

REPORT comes from the University of Michigan of the adoption of a rather novel procedure in the surgical clinic of Dr. Carrow. The case was that of a young man afflicted with a disease which caused the complete loss of sight in one eye. In order to prevent the contagion spreading to the well eye, a watch-crystal was inserted under the lid of the unaffected eye. No impurities can now enter from the outside, and the patient is able to see very well through his novel monocular.

THE tracheotomy-tube has found a new use in overcoming the insufficient breathing-capacity of race-horses. Since the great horse Ormond was condemned as a roarer, attention has been called to the prevalence of this malady among thoroughbreds, and resort has been had to tracheotomy with admirable results. The statement is made that at the recent Manchester races in England three of the four best steeplechasers carried silver tubes in their windpipes.

A CHICAGO ham containing a large consignment of trichina has escaped the vigilance of the export officers and found its way to Antwerp, Belgium, where it is doing much in a small way to disturb our peaceful international relations. At all events, this missive from our pork-proud city of the West will not serve to increase the mutual esteem of the two municipalities, and therefore even the most innocent-looking ham should not receive a passport without the microscopic inspection required by law.

THE success of Roentgen's method of photographing the deeper structures of opaque objects continues to excite the deepest interest. Like so many great discoveries, it needs only to be mentioned to be understood. Bullets and other foreign substances in the flesh and bones of patients have already been located successfully in innumerable instances. Perhaps the most interesting success thus far is that recorded in the news from Vienna, where Dr. Neusser showed the position of calcareous deposits in the bladder, liver, and kidneys of patients. Professor Trowbridge, of Harvard University, is also experimenting successfully with the method.

TESLA, the distinguished electrician, has directed his inventive genius into the medical field. He has produced a machine which he calls an oscillator, and its effect, briefly stated, is to produce a shaking up of the human system (thus following the idea of Charcot), thereby causing certain physical conditions and alterations of forces, which will give energy and force to parts

but partly used. He has also produced an artificial light which under certain conditions is powerful enough to penetrate the human body. Metzuer, of Vienna, claims to have discovered that by its use the bacilli of tuberculosis may be destroyed.

The New York State Medical Society held a meeting of unusual interest last week. The following officers and committees for the ensuing year were elected: President, Dr. J. D. Spencer, Jefferson County; Vice-President, Dr. L. Duncan Bulkley, New York City; Secretary, Dr. F. C. Curtis, Albany; Treasurer, Dr. Charles E. Horton, Albany. Committee on Legislation, Drs. Walter Suitor, Herkimer; M. J. Levi, New York City. Committee on Prize Essays, Drs. A. Jacobi, New York City; Henry Hunt, Albany. Delegates to the British Medical Association, Drs. Charles L. Dana, New York City; James P. Boyd, Albany; John P. Bigelow, Albany; M. Allen Starr, New York City.

The resolutions adopted at the above-mentioned meeting, recommending that a bill be prepared and presented to the Legislature to secure the placing of all private medical institutions for the treatment of cancer and other diseases under the care of the State Board of Health, is a long step toward the proper legal oversight and control of many retreats, concerning which the public at present know nothing, except what their proprietors voluminously set forth in almanacs and kindred literature. New York is afflicted with more than her share of these institutions, and they richly deserve State attention.

Impure Ice and the Health Commissioner.—Health Commissioner Munn, of Denver, is having trouble with the courts of his county. It seems that the bacteriologist of the city found a great number of bacteria in ice sold by a particular company, and accordingly the company was requested to stop the sale of such ice, and on their refusal to do so the persons composing the company were brought before the magistrate and fined. The company, however, still continued to carry on their business, and the commissioner ordered the business stopped.

The county court was appealed to by the company, and they succeeded in obtaining an order from the judge restraining the commissioner from interfering with its business, and also a judgment against him for the costs of the suit. They claimed that no complaint had been entered against them; that there was lack of evidence; that the measure was unjust, oppressive, illegal, and tyrannical; that the pretended ordinance under which the commissioner acted was unreasonable, unconstitutional, and in restraint of trade; that he exceeded his jurisdiction and abused the discretion lodged in him.

On the other hand, the commissioner claims that the ice was obtained from a filthy pond near the city, and was sold as pure lake ice; that the bacteriologist pronounced it unsafe for human consumption; that, according to an ordinance of the city, "The health commissioner may condemn, or cause to be destroyed, any fluid or substance intended for food or drink, whenever he is satisfied that its consumption might be dangerous to health." This, of course, gives the commissioner exceptional and absolute powers—the Board of Health of Philadelphia and other cities have similar authority—and yet it is essential to the health of a community that some such constituted body should have the power to decide summarily in such questions. As the commissioner well states, this cannot be left to a court or jury, "they could not determine whether the ice was impure better than the experts selected by the city." And if the health boards cannot restrict an unsanitarily conducted business because it would be an interference with commerce, they might as well give up their office, since to prevent a milkman from selling impure milk or a manufacturer from allowing goods to be made in unclean sweat-shops is a restriction of trade. One might as well ask the chief of the fire department to obtain an order from the court before he be allowed to cut down trolley wires or break windows when a fire occurs.

It is necessary, of course, that the men who are given such absolute powers be chosen for their fitness and not because of political sympathy. Commissioner Munn, of Denver, Colorado, is in every way capable, and his appeal to the courts of the State will, no doubt, be successful, and they will sustain him in his efforts. The decision of this court will be awaited with much interest by the various municipal health boards and health commissioners, as it will more clearly define the power they are entitled to use.

Digestion in Plants.—It is natural to have a pretty high opinion of anything that belongs to ourselves. While we have admitted for some time past that some very wonderful processes and things were to be found in the organization of the lower animals and plants, yet we have always had a feeling of conscious pride that the term "fearfully and wonderfully made" applied with special and unique appropriateness to the mechanism of our own bodies. Our complex and elaborate digestive system, for instance, is a case in point. It was a great blow to our *amour propre* to find that it was duplicated in every detail in the stomachs of our animal cousins, but we still clung to the facts that we had more kinds of digestive ferments than any other species, and that while we might deign to admit kinship with animals in this respect, we were still immeasurably superior to plants of any sort. We are just beginning to submit to the epithet "animal" as applied to ourselves without worse protest than a half-suppressed growl, but the mere suggestion of any vegetable affinity —"cabbage-head" or "pumpkin," for instance—will cause an instantaneous contraction of the *arrectores pilorum* over the whole length of our dorsal aspect.

But even this barrier behind which our pride has entrenched itself, must also go down. No less distinguished authorities than Prof. Marshall Ward and Pentland Smith have discovered a vigorous starch-digesting or diastatic process in the grains of the familiar maize and the tubers of the lowly potato. In both cases so soon as the bud or shoot begins to develop it secretes a ferment that attacks the starch of the mass and changes it into sugar for absorption by its growing cells. It is this conversion and rapid absorption of the starch that cause the familiar shrinking and shrivelling of potatoes that have sprouted in the cellar. Thus it seems clear that we shall have to "acknowledge the corn"—as one of our relatives.

But worse is to follow. Not only can this wretched cereal do with ease what our salivary glands and pancreas strain themselves red in the face over, but it also

performs another feat that our elaborate human digestive apparatus is utterly incapable of, and that is, dissolve or "peptonize" cellulose or woody fiber. The starch needed by the shoot for conversion is enclosed in cells with firm walls of cellulose, and these must be eaten through before it can be acted upon by the diastatic ferment. Accordingly another ferment is secreted that dissolves cellulose as our pepsin does proteids.

Of the helplessness of our own ferment in the presence of cellulose we have all had personal and painful demonstration in the extraordinary vagaries indulged in by the festive cucumber and the frugal raw turnip when introduced into our unsuspecting and defenceless interior.

In fact, the peptonizing power of the vegetable ferment is so much greater than that of the animal that, as we see daily, the papayotin of the pineapple, the pawpaw, and other fruits are rapidly becoming commercial rivals of the porcine product.

Certain other plants display even more strikingly human characteristics in that they have actually become meat-eaters and meat-digesters. It has long been known that a large family of flowering plants of which the "Sundew" and "Venus' Fly-trap" are familiar examples, secrete upon the surfaces of their leaves a thick, sticky juice, which in the former simply entangles insects, and the latter attracts and holds them till they can be actually seized by the halves of the leaf closing upon them trap-fashion. Whether these were utilized in the nutrition of the plant was, however, an open question until quite recently, when a series of analyses of this viscid secretion was made, and it was found to contain both a peptic ferment and an acid, which together rapidly dissolved all the soft tissues of the insects, leaving only the wings and hard cuticular casing of the body and limbs. And what makes the resemblance to our own gastric processes most striking is that neither the acid nor the ferment is present in any quantity in the resting condition of the leaf, but both are poured out as soon as nitrogenous matter is placed upon the surface.

Truly our pedigree is of wonderful length, and we must regard ourselves not only as "magnificent animals," but as superb vegetables. If our physiologic processes are so strikingly similar, what a flood of light may vegetable pathology be expected to throw upon our disease-processes!

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninetieth Annual Meeting, Held in Albany, January 28, 29, and 30, 1896.

(Concluded from page 139).

ROSWELL PARK, M.D., of Buffalo, President, in the chair.

FIRST DAY—JANUARY 28TH (EVENING SESSION).

DR. GRACE PECKAM-MURRAY, of New York, in a paper on

TETANOID HYSTERIA,

said that by tetany she understood a disorder characterized by spasms of an intermittent character, which during the intermissions could be produced by pressure over a principal nerve-trunk or bloodvessel of a part. She then reported three cases typical of the three varieties given by Trousseau—the benign, the medium, and the severe. In those rare cases in which there was a fatal termination this was due to spasm of the diaphragm and other respiratory muscles.

DR. NATHAN JACOBSON, of Syracuse, read a most interesting and timely paper, which will appear in our next issue, on the

TREATMENT OF MALIGNANT DISEASE IN SO-CALLED CANCER-INSTITUTIONS,

and called forth the resolution of the Society asking for State inspection and supervision.

DRS. L. D. BULKLEY, F. W. SHAFFER, and others said that from what they had learned from experience they could heartily indorse the statements contained in this paper.

DR. H. R. HOPKINS, of Buffalo, made some remarks on

ALCOHOLISM AND PUBLIC HEALTH,

in which he scored the recent bill providing for the compulsory teaching of the children in the public schools regarding the effects of alcoholics and narcotics, and dwelt particularly on the fact that the same body of persons that had secured the passage of this pernicious bill had also succeeded in securing similar legislation in forty States.

DR. A. W. SUITER, of Herkimer, introduced a resolution, which was adopted, to the effect that the Committee on Legislation be instructed to use all honorable effort to bring about a repeal of or an essential modification of this law.

DR. J. H. HUNT, of Brooklyn, with the aid of lantern-slides, delivered an address on

THE EVOLUTION OF PATHOLOGY,

and showed portraits of many of the great men of past ages who had contributed to this branch of medical science.

SECOND DAY—JANUARY 29TH.

In executive session, among other resolutions approving of certain recommendations in the President's inaugural address, was one regarding the relation of the Society to the American Medical Association. In adopting this resolution it was stated that the Society was ready to co-operate in any plan compatible with the dignity of both organizations, whereby the interests of professional harmony and the liberal spirit of the age would be advanced.

The following resolution was also adopted: That the Committee on Legislation be directed to secure the passage of a bill by the Legislature whereby "cancer-institutions" should be placed under the care of the State Board of Health in the same manner as private institutions for the care of the insane are under the care of the State Commission in Lunacy.

DR. W. E. FORD, of Utica, read a paper on

VAGINAL HYSTERECTOMY BY CLAMPS.

He said that hysterectomy was certainly not an elective operation for suppurative disease of the tubes and ovaries in most instances. Vaginal hysterectomy had

been done with clamps years ago and abandoned for ligatures, but Jacobson, of Brussels, had claimed, and substantiated this claim with statistics, that with properly constructed instruments the vaginal operation with clamps was the safer one. The disadvantages were that the presence of clamps in the vagina was a source of discomfort to the patient, and there was danger of too free oozing of blood. This second objection might be partially, at least, overcome by using instead of gauze-packing the cylindrical pledgets used abroad. The chief feature of Jacobson's operation appeared to the author to be the skilful use of the peculiar forceps and scissors. Recovery was much more rapid after the vaginal operation.

Dr. A. Vander Veer, of Albany, read a paper, entitled

COMPLICATIONS IN ABDOMINAL SURGERY REQUIRING INTESTINAL ANASTOMOSIS, AND THE BEST METHOD OF DOING THE OPERATION.

He reported three cases as illustrative of the type of emergency-cases often met with, and of the need in such of rapid surgical as well as efficient surgical methods. It was in just this class of cases that the Murphy button was especially useful, notwithstanding that there were certain real dangers associated with the use of this method, such as the retention of the button. For incised wounds of the intestine, and for gunshot-wounds of the bowel, if of small calibre, the Lembert suture or some other method of intestinal suture without mechanical device was appropriate. Of all the methods of intestinal suture that had been proposed, he thought Maunsell's method was the one most likely to be generally adopted.

Dr. D. Mann, of Buffalo, read a paper on

SLOUGHING OF UTERINE FIBROIDS AFTER ABORTION AND LABOR.

He said that under the stimulus of pregnancy fibroids previously of slow growth often became formidable complications. In a series of 597 cases, in which no treatment had been adopted for this complication, death had occurred in 220 cases. Owing to the distortion of the uterine canal, there is always great danger of sepsis.

Dr. H. J. Garrigues, of New York, read a paper on

THE TECHNIQUE OF THE IMPROVED CÆSAREAN SECTION,

he recommending doing the operation, if possible, just before the expected time of labor, and having present four assistants. After attending to the usual precautions regarding the cleansing of the patient, the instruments, and the hands of those engaged in the operation, an incision was to be made in the median line half above and half below the umbilicus. After turning out the uterus and closing the upper part of the incision, a rubber constrictor is to be loosely applied around the cervix and broad ligaments and crossed. After properly guarding the abdominal cavity from contamination, the constrictor is tightened, the uterus incised in the upper part for four or five inches, and an effort made to deliver the head of the child before the uterus has contracted in front of it. The cord is tied and cut, and if the placenta remains adherent after the uterine sutures have been inserted, it is to be peeled off with the membranes. In suturing, it is better to keep the peritoneum outside of the muscular layer. The interior of the uterus is cleansed by wiping, and the elastic ligature very gradually loosened. All oozing having ceased, the uterus is returned to the abdomen and an antiseptic dressing and bandage applied. The bowels are moved on the third day.

Dr. W. Gill Wylie, in opening the general discussion on the foregoing papers, spoke of the abdominal *versus* the vaginal operation. He said he would rather have 10 per cent. of ventral herniæ and have 25 per cent. remain in bed for many weeks than have an increase of even 1 per cent. in the death-rate, and for that reason he had preferred the abdominal operation. He had, it was true, employed the vaginal route in 105 cases, but the good results he was inclined to attribute to these cases having been selected. He did not favor morcellation in the removal by the vagina of uterine fibromata.

Dr. Herman J. Boldt, of New York, said that where the uterus was situated high and was quite firmly fixed ligatures could not be used, but where the uterus was movable and there was but little inflammation in the adnexa the ligature-operation was suitable. It was not at all necessary to leave the clamps on longer than twenty-four hours. Total extirpation of the pelvic organs should be resorted to only where there were recurrent pelvic inflammations or suppurative processes.

Dr. M. D. Mann, in referring to intestinal operations, said that as the element of time had not seemed to him to be so important as Dr. Vander Veer would have us believe, he had preferred the intestinal suture to the use of the Murphy button. In suturing he had found that time could be saved by taking four stitches of continuous suture, then interrupting it, and tying. He had become deeply impressed with the great value and importance of the vaginal operation, but the danger of intestinal fistulæ with this operation fully offsets the liability of ventral hernia following abdominal section.

Dr. W. G. MacDonald, of Albany, said that he preferred to pass a hook around the broad ligament and pull it down. This gave the forceps good control of the ligament. He objected to a multiplicity of clamps in the field of operation, nor was it necessary by this method of operating.

Dr. A. H. Goelet thought the popularity of vaginal hysterectomy depended chiefly on its novelty, and in support of this assertion enumerated a number of the disadvantages of the vaginal method. He admitted, however, that it had a limited field of usefulness.

Dr. J. Riddle Goffe, of New York, in discussing Dr. Ford's paper, said that he had been greatly interested in the vaginal method of operating. He believed that in cases of bilateral disease in the pelvis, if the ovaries and tubes were hopelessly diseased, the uterus was no longer of use, and would be better out of the way. This additional procedure, he found, did not increase the mortality, and the operation was made much easier. He had met with two cases recently in which the appendages had been removed through Douglas's pouch, and the uterus left behind. They had come to him shortly after operation with symptoms of infection, and examination had shown the uterus to be full of pus. The original focus of disease had evidently been in the uterus

in these cases. The matter of using clamps or ligatures seemed to him largely a matter of individual preference.

DR. A. T. BRISTOW said that in many cases, as in the one of strangulated hernia described in Dr. Vander Veer's paper, the element of time was extremely important; hence the use of some mechanical device appeared to him essential. All the methods of intestinal suture were slow, and required much expertness.

DR. B. FARQUHAR CURTIS, of New York, favored suture where the case was not extremely urgent, but where rapidity of operating was an essential, the Murphy button was better. It was objectionable in cases of gastro-enterostomy on account of the liability of the button falling into the viscus.

DR. WILLY MYER, of New York, read a paper on

EARLY DIAGNOSIS OF TUBERCULAR KIDNEY.

This will appear in a subsequent issue of THE MEDICAL NEWS.

DR. REYNOLD W. WILCOX, of New York, read a paper entitled

THE SYMPTOMS AND DIAGNOSIS OF THE INDIGESTION OF STARCHY FOODS,

which will also appear in a subsequent issue.

DR. BULKLEY, in discussing this paper, emphasized the importance of proper mastication, and of the avoidance of imbibing fluids along with the food.

DR. T. HALSTED MYERS, of New York, read a paper on

CONGENITAL DISLOCATION OF THE HIP,

and exhibited a patient upon whom he had successfully operated. He said that the Lorenz operation was safe if the operator was sufficiently skilful and employed thorough asepsis, and that even when it failed to cure it left the bone in a position of greater stability, and hence the usefulness of the limb would be improved. The little girl upon whom he had successfully operated was four and a half years of age, and had been delivered after a difficult labor. Nothing abnormal had been noticed until she began to walk. Last February the shortening was found to be one and a half inches, and she presented all the symptoms of congenital dislocation of the hip. Under ether, the dislocation was forcibly reduced and the limb put up in plaster-of-Paris spica, with the limb abducted about thirty degrees. Last July the present splint had been applied. It exerted pressure against the trochanter and held the limb abducted. Motion at the hip, knee, and ankle was allowed. The shortening was now about one-fourth of an inch; there was no telescoping and no pain. This apparatus would be worn by the child for another year.

DR. EDWARD D. FISHER, of New York, read the opening paper on a

DISCUSSION OF THE PRESENT STATUS OF THE SURGERY OF THE BRAIN.

He said that the indications for operation were: (1) traumatism; (2) localized epilepsy; (3) athetosis; (4) tumors; (5) abscess; (6) cerebral hemorrhage; and (7) microcephalus. In cases of epilepsy he favored the bone-flap operation; in tumor, he preferred the removal of the bone with trephine and rongeur. He had been unable, even after careful observation, to detect any shock due to the concussion produced by operating with mallet and chisel. Many of these cases were so miserable, and without hope, that even though such operations were only occasionally successful, they would be justifiable.

DR. M. ALLEN STARR, of New York, followed with a paper on

BRAIN-TUMORS.

He said that the two great obstacles to operating on brain-tumors were the difficulty of accurately locating them and the difficulty of reaching them. It is only when the tumor is small and lies upon, but does not involve, the cortex, that the prognosis can be said to be absolutely good. Out of 162 operations, 48 were cases in which no tumor was found; 7 in which the tumor was found but not removed; 35 in which the tumor was removed and the patients succumbed; and 72 in which the tumor was removed and the patients recovered. He also preferred the flap-operation.

DR. CHARLES L. DANA, of New York, read a paper on

THE VALUE OF CRANIOTOMY FOR IMBECILITY AND EPILEPSY.

He had found after excluding the older operation, which did not fairly represent the surgery of the present time, 22, of which 6 had been improved, 10 unimproved, and 6 died. Congenital idiots and imbeciles were the two classes most likely to be benefited by operation of this kind, and the most that could be expected was a mental and physical improvement. He felt convinced that the operation produced its effect by its profound impression and consequent disciplinary influence.

DR. B. SACHS, of New York, read a paper on the

SURGICAL TREATMENT OF EPILEPSY.

He said that in New York City, at least, operations for the relief of this condition were much less frequent than formerly. Such surgical interference was particularly indicated before degeneration had taken place. Young children do not bear such operations at all well.

DR. JAMES W. PUTNAM, of Buffalo, read a paper on

CRANIOTOMY,

in which he referred to the more encouraging experience of Buffalo surgeons in this class of operations. It could not be denied that but few were benefited, but even this small hope was worth an effort when one considered the pitiable condition of the individuals for whom relief was asked.

DR. GEORGE WOOLSEY, of New York, continued the discussion. He said that in only one of his eight operative cases could it be strictly said that a cure had been effected. He favored operating with carvers' chisels, ground upon their outer surface.

DR. WILLY MEYER, of New York, read a paper on

HETEROPLASTY, WITH CELLULOID TO COVER DEFECTS IN THE SKULL,

in which he described his experience with this particular material. He had had difficulty in obtaining the celluloid in sufficiently thick plates, but now that obstacle had been surmounted.

DR. JOSEPH COLLINS, of New York, thought that the preceding speakers had presented too gloomy a view of the present status of cerebral surgery. It should be

borne in mind that operation was the only hope of relief in purulent infiltration of the brain, which in 35 per cent. of all cases was the result of chronic purulent otitis.

Dr. Floyd S. Crego, of Buffalo, spoke in much the same strain. He believed that a very common error was made by surgeons in failing to continue medical treatment after the operation. In his opinion it should be persisted in for two years.

Dr. E. B. Angel said that there was no necessity for performing heteroplasty, as the deficiency was filled in with very dense fibrous tissue.

Dr. W. C. Krauss, of Buffalo, read a paper on the

TREATMENT OF SCIATICA WITH NITROGLYCERIN,

in which he said that this line of therapeutics had yielded him so much better results than other methods of treatment that he felt impelled to advocate its trial in all cases of sciatica before resorting to other medication. He reported seven cases which had been markedly benefited by the administration of nitroglycerin in doses of 1 minim of a 1 per cent. solution three times daily. He did not claim that it cured *every* case, but only a fair percentage.

Prof. James H. Etheridge, of Chicago, delivered an address on

DEFICIENT EXCRETION FROM KIDNEYS NOT ORGANICALLY DISEASED IN SOME OF THE DISORDERS PECULIAR TO WOMEN,

which will appear in a subsequent issue of The Medical News.

Dr. Bulkley said that fifteen years or more ago he had incidentally discovered that the course of eliminative treatment employed by him in most cases of skin-disease not infrequently exerted a marked influence on menstrual irregularities and difficulties. This had happened so frequently that some of his patients had brought to him other members of the family simply to have them treated for menstrual disorders. That his treatment was essentially that laid down in the paper was shown by the fact that it was his habit to prescribe fifteen grains of acetate of potassium, with a little cascara and nux vomica, before each meal, using as a vehicle the extract of rumex.

At the evening session Dr. Roswell Park, the President, delivered his anniversary address, taking for his theme

THE VALUE OF THE COMPARATIVE METHOD IN THE STUDY OF PATHOLOGY.

(See The Medical News, February 1st, page 113.)

THIRD DAY—JANUARY 30TH.

Dr. W. G. MacDonald, of Albany, read a paper on

THE REORGANIZATION OF THE CORONER'S SYSTEM.

He recommended the appointment of a medico-legal officer by the Appellate Division of the Supreme Court, for a term of five to seven years. This officer would thus be removed as far as possible from politics, and his duties would be entirely medical, the legal portion being attended to by the usual court machinery.

Dr. Rudolph Witthaus, of New York, said that it was hoped that with the co-operation of the State Bar Association this Society would be able to have passed through the present Legislature a bill having provisions similar to those recommended in Dr. MacDonald's paper.

Hon. Tracy C. Becker, Drs. Balch and H. Bender all spoke in much the same strain, and, on motion, the President was requested to appoint an auxiliary committee of twenty-five or more.

Dr. W. Browning, of Brooklyn, read a paper on

DEVELOPMENT OF MUSCULAR ATROPHY ON A BASIS OF OLD INFANTILE SPINAL PARALYSIS, A FAVORITE TYPE.

He said that his experience in this class of cases had warranted him in drawing the following conclusions: (1) that infantile spinal paralysis is sometimes followed by further atrophy at a subsequent period; (2) that the assumption that it is due to extension of the cord-affection could not be accepted in most instances; (3) in the young some other peripheral affection is present; and (4) disuse, poor nutrition, and exposure are powerful etiological factors.

Dr. M. A. Veeder, of Lyons, read a paper on

NEURITIS COMPLICATING DISLOCATIONS OF THE SHOULDERS AND ELBOWS.

He said that the ulnar and median nerves were liable to become involved in dislocations at the elbow, and the symptoms varied according as the trophic, motor, or sensory filaments of the ulnar nerve were involved. At the shoulder the impairment of the muscles might lead to a recurrence of the dislocation almost spontaneously when the arm was placed in certain positions. Sometimes the full effect of the damage done to the nerve might not appear for several months. In dislocation of the humerus, the axillary structures were apt to be put on the stretch, and if the elbow were pulled out from the body, a powerful leverage would be exerted in such a way as to increase this traction on the axillary nerves. Massage and electrical treatment were of service.

Dr. W. Hailes, of Albany, read the histories of two cases of

DIFFICULT PERINEAL AND SUPRAPUBIC LITHOTOMY.

Dr. M. L. Foster, of New York, read

SOME NOTES ON TRACHOMA.

He objected very strongly to the use of the term "granular lids," which not only had no very definite meaning at the present time, but served to give the impression that the case was incurable, when, in fact, it might be perfectly amenable to treatment. He preferred the term "follicular conjunctivitis." Regarding the disputed germ-origin of this condition, he said that at present there was no positive evidence that it was due to micro-organisms.

A number of other papers were read by title.

President Wilson, of the Board of Health of New York City, strongly recommends that all rear tenements be abolished as a constant and uncontrollable source of disease. There are more than 2500 of these damp, filthy, and ill-ventilated buildings which house a population of nearly 60,000 people.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, January 16, 1896.

Joseph D. Bryant, M.D., President, in the Chair.

THE BACTERIOLOGY OF EMPYEMA IN CHILDREN.

Dr. Henry Koplik said that the bacteriology of pleuritic exudates had been materially advanced in recent years. There were several varieties of empyemas in children, *e.g.*, (1) meta-pneumonic; (2) streptococcus empyemas; (3) tubercular empyemas; and (4) fetid empyemas. In meta-pneumonic pleurisies the pneumococcus might from the outset attack the pleura with great severity, while the resulting pneumonia might be so slight as not to give rise to noticeable symptoms. In a series of fifteen cases of empyema in children he had found that in nine, or 6 per cent., the diplococcus of pneumonia was present in pure culture. In a little over 3 per cent. of the meta-pneumonic pleurisies the streptococcus was also present, but did not appear to affect the prognosis. Empyema in children may arise from a slight streptococcus-infection of the throat, or a slight wound-infection, but in those empyem as which are associated with severe sepsis, as in scarlet fever, the streptococcus is very virulent and the prognosis is accordingly more grave. The tubercular empyemas are not so frequent as the meta-pneumonic and streptococcus varieties, but as a rule the prognosis is bad. They are accompanied by great thickening of the pleura. The fetid empyemas might be conveniently divided into (1) those due to a streptococcus- or pneumococcus-infection, and (2) those due to mixed infection. The speaker said that in his experience those empyemas in children in which there had been an attempt at spontaneous cure by perforation through a bronchus were very prone to be fetid. In children fully two-thirds of the empyemas are meta-pneumonic.

THE DIAGNOSIS AND PECULIARITIES IN CHILDREN.

Dr. August Caillé said that in children the infection of the pleura was very frequently secondary, and that exposure to cold could only be considered a predisposing cause of empyema. Of eighty cases coming under his notice, sixty-seven had been in children under five years of age. Probably one-third of all the pleurisies occurring in early life are purulent or sero-purulent, and in gangrene of the lungs or in pyothorax due to traumatism the empyema is apt to be of the fetid variety. The change of a simple pneumonia into a pleuro-pneumonia should not be difficult to recognize. In the former the child cried freely without exhibiting any sign of pain; in the latter it was quite apparent that crying and coughing, and even the act of respiration, were painful. Inspection would show lateral curvature of the spine, bulging or retraction of the intercostal spaces on inspiration, displacement of the heart; but all these signs would not be present in every case. Moderate dyspnœa and bulging of the affected side were, however, usually present in cases of pleuritic effusion. The fever was apt to be irregular, but might be altogether absent, as in cold abscesses elsewhere. In cases of pleuritic effusion palpation would show bulging of the intercostal spaces on inspiration, and an absence or diminution of vocal fremitus. In some instances there would only be a diminution of the fremitus as compared with another part of the thorax, and in any case to detect the change in the fremitus it was necessary to make the child cry. On auscultation, if there were a sufficiently thick layer of fluid between the lung and the ear, the respiratory sounds would be diminished, but tubular breathing might be heard over the fluid, being transmitted from the compressed or inflamed lung-tissue. Diminished vesicular breathing and fremitus with dulness would point to thickening of the pleura. Where the effusion was considerable, egophony might be audible in the axillary line. Bronchophony would be heard over the consolidated lung, but not over the fluid. Percussion would reveal flatness over the area of fluid effusion, and would also impart to the finger used as a pleximeter a distinct feeling of unusual resistance. It should be remembered that in children an apparent dulness on the right side posteriorly is not necessarily pathological. If the percussion were made quite forcibly, the resonance of the underlying lung might be brought out. When there is sufficient fluid to compress the lung the lower portion of the chest will be flat on percussion, and there will be an absence of breath-sounds; while over the upper portion there will be an increase in the respiratory sounds. The change in the level of the fluid resulting from causing the patient to change his position is not easily detected in young children. The only way to make a positive diagnosis of fluid pleuritic effusion in a little child and of determining the nature of this fluid is by puncture with an aspirating-needle. Before doing this the site of the proposed puncture should be made surgically clean, and then, with the child's arm held upward, a clean needle is plunged into an intercostal space to the depth of one or two inches. Unless the character of the fluid is perfectly apparent, it should be subjected to microscopical examination. On the withdrawal of the syringe the puncture should be dressed with adhesive plaster or gutta-percha tissue. There is no danger of injuring the liver if the puncture on the right side is not made below the eighth intercostal space. Even in desperate cases an incision should be promptly made after establishing the diagnosis of empyema, and it should be borne in mind that even in those cases in which a perforation into a bronchus has already occurred the pus will frequently not escape until the intrathoracic pressure has been relieved by an incision into the chest. The only satisfactory explanation of the manner in which the lung is reinflated after such an opening has been made into the chest is, that it is due to the mechanical effect of coughing, the air being driven in the direction of the least resistance, which in this case is from the sound to the crippled lung.

THE TREATMENT OF EMPYEMA IN CHILDREN.

Dr. Joseph E. Winters said that the natural history of empyema furnished the indications for treatment, and these were to remove the pus, prevent reaccumulation, procure complete expansion of the lung, and prevent deformity of the chest. An empyema got well, not by healing from the bottom, but by the expansion of the lung and the ascent of the diaphragm, and consequently the removal of a portion of the pus by aspiration prior to incision was harmful, as the diminished

pressure so produced made the expansion of the lung more feeble. It was by this expansion of the lung that the fluid was expelled from the thorax. As soon as the inflammatory process had subsided an incision should be made into the chest. In his opinion, it was because of the earlier diagnosis and treatment of this condition at the present time, rather than because of improved methods of treatment, that the mortality from empyema had been so reduced. He felt that at present there was too great a tendency to resort to resection of one or more ribs in recent cases of empyema. This operation was not indicated in such cases, because we did not desire a falling in of the chest until after the lung had fully expanded, and, moreover, resection of the rib was followed by a much higher mortality than was simple incision.

Where there was no cyanosis present, the incision into the chest might be done under an anæsthetic, and for this purpose chloroform was preferable, but the anæsthesia should be only partial in order that the patient might cough and aid in the expulsion of the pus. Before making the incision an aspirating-needle should be inserted, and if this detected fluid the needle should be left in place and used as a guide to the knife in making the incision. This incision should be at least two inches long, and should be made two to three inches above the base of the normal thoracic cavity. During the operation the patient should be placed on the affected side and close to the edge of the table. In this position it was possible to irrigate the pleural cavity carefully and safely and so remove coagula. Hot water should be used for this purpose. The speaker favored giving the child immediately after the incision had been made a teaspoonful of whiskey, undiluted, as when thus given it acted as a stimulant and also excited cough and crying. During convalescence massage and systematic chest-exercises were useful, and experience had shown that forced expiratory effort, such as occurs in blowing wind-instruments, was an efficient aid in securing complete expansion of the lung.

Dr. A. Jacobi said that while he concurred in the statement that as the diagnosis of empyema had been more promptly made, the term "chronic pneumonia" had been less frequently heard, he wished to call attention to the fact that an interstitial pneumonia was of common occurrence in children, and was responsible for a persistence of the symptoms and physical signs long after the usual time. Persistent fever and dulness after an ordinary pneumonia might not, therefore, mean a secondary empyema, but the occurrence of an inflammatory peribronchial infiltration, which might very properly be termed a chronic pneumonia. These symptoms, under such circumstances, might last for six or eight weeks.

Dr. B. Scharlau said that on looking over his hospital-records for the past five years he found that he had performed resection of the ribs for empyema between one and two hundred times—in fact, after a fair trial of other methods of treatment, he now did this operation to the exclusion of all others. He did this because such a line of treatment seemed to him more in accordance with the principles guiding us in the treatment of other abscesses and because complete recovery was more rapid after rib-resection than after other treatment. He had found that in about 50 per cent. of the cases of empyema there were present coagula which were too large to escape through the small incision ordinarily made. Some of his patients had recovered in ten days after resection of a rib, and it was not at all uncommon for recovery to be complete in three weeks, whereas after simple incision convalescence usually occupied six or eight weeks. He had never found that the resection of a portion of the rib led to malformation of the chest. Most of those who advocated simple incision had never given rib-resection a trial.

Dr. W. P. Northrup said that his observations on empyema had been for the most part on children under three years of age, and next to tubercular meningitis he considered the diagnosis between fluid effusion and pneumonia in an infant of eighteen months the most difficult. The most important physical signs were one-sided dulness and the absence of vesicular breathing. He frequently found it impossible for him to distinguish the bronchial breathing occurring in connection with a moderate effusion from that associated with pneumonia. From these considerations, it followed that one must early resort to the use of the aspirating-needle in many cases, and in doing this it was most important that the result of this procedure could be relied upon, which was not true, unless a needle of very large calibre was employed, and inserted in two or three places, if the first puncture proved to be negative. The site of puncture and the needle should, of course, be carefully sterilized. After careful observation on many cases he felt warranted in saying that the drainage of the cavity would be perfect, no matter how the incision into the chest was made. It was ordinarily well to select the sixth intercostal space, and in children under two years of age the incision should be made nearly two inches in length, and two drainage-tubes should be inserted side by side. The practice at the present time did not seem to be in favor of resecting a rib in these young children.

Dr. Henry D. Chapin said that he did not know of any other common disease of childhood in which so many little ones lost their lives as a result of a tardy diagnosis as in empyema. The younger the subject the more difficult was it to understand the physical signs. In his experience there was no bulging of the chest with a moderate fluid effusion, and this was probably due to the fact that the lung, and not the chest-wall, furnished the least resistance. Bronchial respiration was commonly heard all over the fluid. As the majority of cases of empyema in children seem to follow pneumonia, the physician should be ready to make exploratory puncture as soon as it is evident that the symptoms and signs of pneumonia are persisting for an unusual time. A large needle should be employed. If in the course of such a pneumonia we found beginning dulness at the apex, there was good reason for believing that an effusion into the pleural cavity had occurred, and had pushed up and compressed the lung. He had tried rib-resection in a few cases, but in some of these, as in the hands of surgeons of known experience, sinuses had persisted; and, as his results from simple incision had been satisfactory, he could see no good reason for resecting a rib in infants.

The President being called upon for an expression of opinion on this point, stated that his experience had convinced him that recovery was more rapid after rib-resection.

Dr. Floyd M. Crandall said that two important facts had been elicited by this discussion, viz.: (1) That empyema in young children was almost always secondary, frequently to pneumonia; and (2) that the diagnosis of this condition in such young patients was very difficult. These facts should teach us to be charitable to brother-practitioners who happen to make mistakes in the diagnosis of these cases.

Dr. Caillé said that irrigation of the pleural cavity had been almost abandoned, because it broke up the adhesions between the lung and thoracic wall.

Dr. Winters said that he was very much opposed to resection of a rib in these cases as a primary procedure, because in children under two years of age the death-rate from this operation was 80 per cent., whereas after simple incision it was only about 25 per cent. Recent personal inquiry had elicited the fact that in most of the hospitals of Europe this practice of resecting a rib in cases of empyema had been abandoned. He was also of the opinion that the difficulty of making the diagnosis of empyema in young children had been exaggerated, for if the examiner was careful to make the patient inspire deeply, the sound was totally different from that produced by consolidated lung.

REVIEWS.

Cutaneous Medicine, a Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M.D. Part I. Philadelphia: J. B. Lippincott & Co., 1895.

The appearance of a new systematic treatise on diseases of the skin by Dr. Duhring is an event of much importance in the history of American medicine. In the year 1876 this distinguished clinician and author gave the world what was then the most condensed practical and trustworthy text-book on dermatology extant, and its signal merits were so much appreciated abroad that it was translated into the French, Italian, and Russian languages, and was very widely read. In America three large editions were published, the last of which appeared in 1882. It thus happens that this book was the chief source from which most American students derived their knowledge of skin-diseases. Now, after a period of twenty years, during which Dr. Duhring has zealously devoted himself to his chosen line of study, he lays before us this mature work, which promises to be one of the most important additions to American medical literature ever published, and which will readily take an assured position beside similar works of foreign authors. The scope of this work, of which we have now the first part, containing 220 pages, is laid on broad, practical, and conservative lines. In his preface Dr. Duhring says:

> The author is convinced that the skin occupies a more conspicuous place in medicine than has heretofore been accorded to it. It is a large, complex, important organ of the body, and is by no means a mere protective covering. It is not only subject to many diseases which are wholly confined to the skin, but it is also intimately connected with numerous general morbid processes, to describe and to point out the significance of which is within the province of cutaneous medicine.

In the part now published the groundwork of dermatology is considered, and in each section we find the subjects treated in a careful, clear, and ample manner. The author, while he gives his own views in detail, is exhaustive in his presentation of the facts and opinions held by all accredited authors. There is evidence on every page of deep and broad research and mature thought. We do not find a mere categorical statement of facts and opinions, but, what is necessary in works of this class, a thorough and judicial study and sifting of all statements, followed by a lucid and homogeneous presentation. The chapter on the "Anatomy of the Skin" is exhaustive, occupying fifty-two pages. It is very clearly and simply written, and the text is illustrated by a very large number of figures drawn by the most experienced authors in histologic and pathologic anatomy. The physiology of the skin is likewise treated in a thorough manner.

The section on "General Symptomatology" is so full, comprehensive, and clear that it will be a great aid alike to the student and general physician. The same remarks apply to the sections on etiology, pathology, treatment, and prognosis.

While the work is almost exhaustive, it is written in such simple and clear language that its perusal is a pleasure rather than an effort.

The Art of Compounding. A Text-book for Students and a Reference-book for Pharmacists at the Prescription-Counter. By Wilbur L. Scoville, Ph.G., Professor of Applied Pharmacy and Director of the Pharmaceutical Laboratory in the Massachusetts College of Pharmacy. 8vo. pp. 255. Philadelphia: P. Blakiston, Son & Co., 1895. Price, $2.50.

This is a book for the pharmaceutist rather than for the physician, although it deals with a number of matters with which medical men could with advantage be familiar. It were really a desideratum that the practising physician should know, both theoretically and practically, more than he does concerning the physical properties of the drugs that he uses, and that he should have a working familiarity with the methods employed in their compounding, together with the results of this process. That physician is a better prescriber, not to say therapeutist, who has an understanding of the science and art of pharmacy. To these ends the book in hand will aid. It will, however, find its greatest field of usefulness among pharmacists and students of pharmacy, and to these it is to be warmly commended. As is well pointed out in the introductory remarks, "Skill involves . . . first, mental knowledge and the power to rightly apply it, and, second, manual dexterity." These objects will be furthered by a judicious use of this book.

An Atlas of Ophthalmoscopy, Etc. By Dr. O. Haab. Translated and edited by Ernest Clarke, M.D., B.S., London. New York: William Wood & Co., 1895.

We are glad to have in English and in so handy a form Haab's pictures of the eye-ground. With a few exceptions they are excellent, and give most faithfully the appearances seen with the aid of the ophthalmoscope. We cannot help wishing that there had not been attempted the so-called shot-silk retina. It is impossible to repro-

duce in the first place, and this special attempt should warn all others hereafter against such an undertaking. If the bull may be pardoned, we have never seen the papilla so utterly invisible, as here represented, in the early stages of optic neuritis. The text accompanying the illustrations is printed in three different positions upon the pages, so that one is provoked to be compelled to reverse the holding of the book with every alternate turning of the leaves. There is an introduction of about fifty pages concerning the ophthalmoscope, methods of examining the eye, etc., which will be found of use by students.

A Text-book of Chemistry, intended for the use of Pharmaceutical and Medical Students. By Samuel P. Sadtler, Ph.D., and Henry Trimble, Ph.M. 8vo. 922 pages and index. Philadelphia: J. B. Lippincott Co.

It must be regretted that the authors of this book decided to attach the word "medical" to its title. Such a term can have only a commercial significance, for the book is not written from the standpoint of the medical chemist. Of its excellence as a manual of general chemistry and of its value to students of pharmacy and industrial chemistry it is needless to speak. Its authors are too well known as successful teachers and investigators in these departments to leave any doubt as to the character of their present work. It is true, also, that such a term as "medical chemistry" is rather arbitrary, since the facts and theories of the science have universal application, but it is also true that in the exigencies of modern medical teaching it is necessary to develop in considerable detail some phases of chemistry, while others are not to be so extensively discussed. All sciences may be viewed from the point of their practical use, and there will be different perspectives for different points. In the present work the perspective is not that of either the medical teacher or student. There are two pages devoted to the manufacture of alizarin and a page and a half devoted to a description of the ptomaïns. The chapter on qualitative analysis is devoted wholly to the usual system of detecting acids and bases by routine tests. No description is given of the tests used in clinical work, nor does toxicology receive any more than passing notice.

We have noted above that as a manual of general chemistry it is highly commendable. We think it a little bulky. Students are able to use books printed with smaller type than this, and it is an advantage to have a handy volume for college-uses. Since the authors are both actively connected with pharmaceutic work, it is to be expected that they should follow the *Pharmacopœia* closely. The work is well printed and contains a large amount of information.

The Evolution of the Diseases of Women. By W. Balls-Headley, M.A., M.D. (Cantab.), F.R.C.P. (London), Lecturer on Midwifery and the Diseases of Women in the University of Melbourne, etc. Pp. 375. London: Smith, Elder & Co., 1894.

The scope of this book is unique, in that it is concerned with the evolution and natural history of various pathologic processes in women. In the words of the author, the plan "is to show the states of the sexual relations as they have evolved in the human race, and the position at which they have now arrived, with their causations and influences on woman; and to trace their influence through their progressive stages, so far as they have tended in the direction of disease. Also to indicate the mode of prevention of such causes of disease, and of such disease not only in the social but also in the medical aspect." Much of unwritten medicine, it will be seen from the foregoing quotation, must be touched upon in the volume, and this has been accomplished in a modest and acceptable manner. It is presented in the first portion of the book, while the etiology, symptomatology, prognosis, and prophylaxis of the commoner gynecologic conditions comprise the bulk of the remainder of the work. In describing these various pathologic conditions the author endeavors to elucidate the course or evolution of the morbid processes, but naturally in many instances does not succeed in doing so, owing largely to the paucity of our knowledge of these diseases. Aside from the laws of sexual hygiene, which are rather fully entered into, and which in most books on gynecology are largely ignored, there is but little new in the book. The style is fair and the reading interesting, but as far as practical usefulness is concerned but little can be said. There is absolutely nothing in the line of therapeutics except a few general directions at the close of the volume. The author has evidently had in mind a theory which he has not been able to present in a satisfactory manner, and some of the views advanced as to the evolutionary nature of the various processes considered are not altogether acceptable, at least in this country.

Physical, Intellectual, and Moral Advantages of Chastity. By Dr. M. L. Holbrook, Editor of the *Journal of Hygiene and Herald of Health*. New York: M. L. Holbrook & Co.

This is a well-written little book of 120 pages, in which the author aims to set forth a high ideal of life, and instead of dilating on the evils of unchastity to point out the advantages of chastity. It is a book that can be placed in the hands of the young of both sexes with profit to them, and physicians by recommending it will show that they do not encourage the commonly held opinion that for young men at least abstinence from sexual intercourse is prejudicial to health.

Indurative Mediastino-pericarditis. By Thomas Harris, M.D., F.R.C.P. London: Smith, Elder & Co., 1895.

Dr. Harris has written a most interesting monograph upon the subject indicated by the title, reporting a number of cases and analyzing the literature. Pathologically he recognizes three classes of cases of chronic inflammatory conditions involving the pericardium and mediastinum. Class I. comprises the cases properly termed indurative mediastinal pericarditis, in which there are adhesions to the surrounding parts, and not unfrequently caseous affection of the lymphatic glands of the mediastinum. Class II. is more frequent, and includes those cases, sometimes termed pericarditis externa and interna, in which the sac is thickened and adhesions have formed to surrounding parts, but with very

little general mediastinitis. Class III. comprises instances of fibrous mediastinitis without any internal pericardial adhesions.

He recognizes the inability in many cases to distinguish clinically one of these pathologic forms from another, though the third class may be distinguished from the other two during life, at least in some instances.

The author then proceeds to report three cases (one of each class), which were followed systematically from an early stage to the termination and post-mortem examination. He tabulates twenty-two additional cases collected from the literature, including only such as contained both the clinical and pathological examinations. It is impossible to detail as fully as we could wish the facts established by this most interesting little work, but we commend it warmly as a careful study in clinical pathology.

An Elementary Course in Experimental and Analytical Chemistry. By John H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Schools of Medicine and Pharmacy in the Northwestern University. Small 8vo. 497 pages and index. Chicago: E. H. Colegrove & Co.

We are pleased to recognize in this manual another evidence of the tendency to abandon the use of a course in qualitative analysis for practical instruction for beginners in chemistry. Dr. Long rightly observes that the system gives a distorted view of the relative importance of that department of chemistry. The complex problems set for the student in the usual qualitative course are not representative of the actual work either of research or commercial analysis. The classification by means of the so-called "group-reagents" is not a scientific one, but a purely arbitrary arrangement for a narrow practical purpose.

In the present work Dr. Long devotes over two hundred and fifty pages to the experimental part; that is, detailed directions for performing two hundred and twenty-six experiments, exhibiting the properties of elements and important compounds, and the general principles of chemistry. There are but twenty-two illustrations in this part, and most of these are not particularly commendable. We think it would be wise to illustrate such works quite freely, selecting the simplest apparatus, and to give a preliminary chapter of some length on the forms and uses of the standard articles, test-tubes, dishes, etc.

In the section on qualitative analysis the usual group-reagents are used. There are also chapters on spectroscopy, toxicology, and volumetric analysis. The decimal system of weights and measures is employed. The work is well printed.

Medical and Surgical Report of the Children's Hospital, 1869–1894. Edited by T. M. Rotch, M.D., and Hubert L. Burrell, M.D. Boston: Published by the Board of Managers, 1895.

This handsome volume of 367 pages is published with the view of presenting to the community, first, the history of an institution organized and maintained for the care of sick and disabled children; secondly, in order to show, by the contributions of the members of its medical staff, how much good work has been done, and the most efficient methods known to medical science of accomplishing its object; and, thirdly, of offering carefully prepared articles, based largely on the practice of the hospital, on various topics of importance in the science of medicine. For this purpose the matter is divided into three parts, under the headings "Administrative," Medical," and "Surgical." Of these the last takes up fully two-thirds of the volume, and presents quite a comprehensive view of this branch of the hospital's work and of its method of treatment. Orthopedics naturally holds a prominent place, and is quite fully illustrated. The medical division embraces only seven short papers, which, however, are of unusual interest. It is to be regretted that greater space was not devoted to this portion of the hospital's service.

The volume is a handsome specimen of book-making, and is creditable alike to the institution whose work it thus brings to public notice, and to the various members of the staff whose unselfish labors have made the hospital what it is to-day.

A Manual of the Practice of Medicine. By George Roe Lockwood, M.D., Professor of Practice in the Woman's Medical College of the New York Infirmary, etc. 8vo. pp. 935. Philadelphia: W. B. Saunders, 1896.

We think that the author of this *Manual* has succeeded in his aim to present "the essential facts and principles of the practice of medicine in a concise and available form," although we cannot encourage his hope that it "will meet the requirements of those who heretofore have been obliged to resort to the larger works of reference, with which medical literature is so well supplied." We believe that there is greater need for the "larger works" in the higher medical education of the day, and that the supply is none too large, although the lesser can be made to serve a useful purpose as adjuvants to this end. For the manner in which the author has performed his task we have only words of commendation. Within a comparatively limited space he has succeeded in reciting clearly and tersely the essentials relating to the practice of medicine, and on the whole he has displayed good judgment in his attitude toward debatable questions. By the use of thin paper of good quality, the volume has been kept within reasonable proportions, and the clearness and size of the type, as well as the typographic arrangement and the press-work, make the reading easy. Of the illustrations, many are well executed, but most are not new.

We rather doubt the accuracy of the statement that "a few cases of typhus fever occur every year in New York and Philadelphia." No reference is made to the efficacy of pilocarpine in the treatment of erysipelas. In the treatment of appendicitis small doses of opium are recommended, while cathartics are interdicted. The designation "hysterical peritonitis" seems not a very happy one, for an inflammation of the peritoneum could not well be hysterical. A better term would perhaps be "pseudo-peritonitis," with or without qualification.

FIG. 6.—Ankylosis of terminal phalanges. Enlargement of second phalanx. (Arthritis in living subject.)

FIG. 5.—Polydactylism with webbed fingers. Osseous union at tops of three phalanges. Extra phalanx at side. Outer and inner carpal bones double, the separation between left bones and the adjacent phalanges being discovered by this process. (Living subject, left hand.)

FIG. 2.—Six pins in centre of section of liver one centimetre thick.

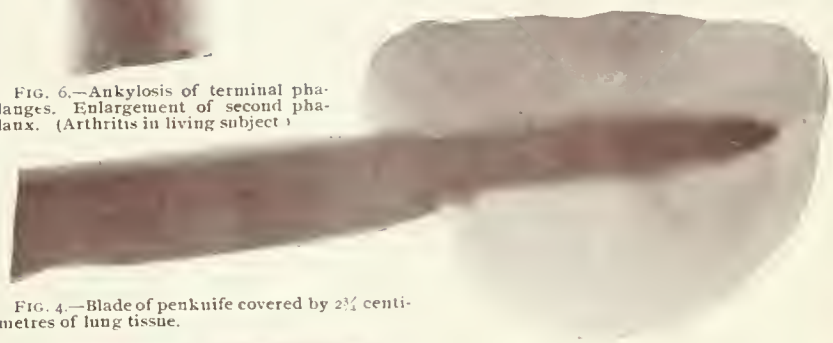

FIG. 4.—Blade of penknife covered by 2¾ centimetres of lung tissue.

FIG. 1.—Small intestine containing cent, lead-pencil and gall-stone. The latter being organic matter is very indistinct.

FIG. 3.—Piece of rib covered with cirrhotic liver one centimetre thick.

FIG. 7.—Hand of cadaver. Two bullets inserted from palmar surface; piece of glass beneath round bullet. Lateral luxation of terminal phalanges of ring finger. Amputation of middle finger. Crush of central portion of index finger.

RÖNTGEN-PICTURES OF MEDICAL SUBJECTS,

Taken by HENRY W. CATTELL, M.D., in the Physical Laboratory of the University of Pennsylvania, with the kind permission of PROF. ARTHUR W. GOODSPEED.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

ROENTGEN'S DISCOVERY.

BY ARTHUR W. GOODSPEED, PH. D.,
OF PHILADELPHIA;
PROFESSOR OF PHYSICS IN THE UNIVERSITY OF PENNA

PROBABLY never before has the entire scientific world been simultaneously aroused to such a pitch of excitement as that caused by the recent remarkable discovery of Professor Röntgen, of Würzburg, that it is possible to produce photographic effects through opaque substances such as wood, ebonite, flesh, and similar dense materials, while glass, which we customarily regard as the most transparent of media, obstructs the passage of the cathodal ray.

If we speak of light as that portion of radiation which is capable of affecting the eye, the new agent, or the X-ray, as the discoverer calls them, is certainly not light, and "photographic" is evidently not the word to apply to the effects produced.

As it seems probable that this exhibition of energy is either a form of radiation or is intimately related to it, the term *radiography* might with propriety be applied to the process of producing the impressions.

The earlier reports from abroad indicated that the use of two induction coils were necessary, the secondary of one be connected with the primary of the other, and that a Crookes' "radiant matter" tube be connected with the secondary of the latter. As glass proved comparatively opaque it was deemed advisable to have a small aluminum window in the tube through which the rays could more easily pass. Later experiments, however, prove conclusively that these refinements are not needed, though without them a much longer exposure—perhaps an hour or more—is required. A single induction coil run by a few storage cells will excite an ordinary Crookes' tube quite enough to produce most of the results yet published. The induction coil in its ordinary form is familiar to every practitioner. A much larger coil is needed than is used for physiological stimulation, that which is being used in the experiments at the physical laboratory of the University of Pennsylvania being about 12 inches long and $4\frac{1}{2}$ inches in diameter. It was constructed by Apps, of London, and possesses a primary resistance of about 0.3 ohm and a secondary resistance of about 3,200 ohms. The Crookes' tube represents as complete a vacuum as it is possible to obtain, and is supposed to have an interior pressure of about one-millionth of an atmosphere. The negative electrode from which the X-rays start is an aluminum disc about a half-inch in diameter. With the apparatus at present used by the writer an exposure of an hour or more was allowed. An ordinary photographic camera is used, having an aluminum shutter, which remains closed. The sensitive plates are entirely enclosed in the photo-holder, which is placed about five inches from the end of the Crookes' tube, in a horizontal position on the table. The subject to be *radiographed* is placed on the cover of the plate holder. The plates are developed and fixed in the usual manner. Radiograms to any extent may be printed upon any sensitized paper.

ROENTGEN'S DISCOVERY ITS APPLICATION IN MEDICINE.

BY HENRY W. CATTELL, A.M., M.D.,
OF PHILADELPHIA;
DEMONSTRATOR OF MORBID ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA.

RÖNTGEN'S weird and wonderful discovery is destined to enrich medicine with possibly the most valuable diagnostic process which recent years have witnessed. Within a month from Röntgen's first announcement sufficient experiments have confirmed the value of his discovery and have pointed toward applications which, though yet unachieved, only await a development of details similar to that which converted Daguerre's slow, faint and uncertain methods into the instantaneous and brilliant photography of the present day.

In brief, Röntgen has found that the electrical current passed through a Ruhmkorff coil and thence to a Crookes' vacuum-tube, develops from the cathode an invisible form of energy, having the double property of penetrating certain ordinarily opaque substances, and of affecting an ordinary photographic plate. Flesh, for instance, is translucent to these rays, and bone and metal, glass and graphite, are comparatively impervious. On this difference in penetrability depends the

effects which are permanently recorded by ordinary photographic plates. Perfect clearness of definition has not yet been attained. It will be convenient to coin the words skiagraph or skotograph to characterize pictures produced by the X-rays and to indicate at once their relationship to and their distinction from photographs.

The surgical imagination can pleasurably lose itself in devising endless applications of this wonderful process. If it becomes possible to drive these mysterious rays through the entire body as clearly as they now penetrate the hand, the realm of utility will be practically boundless. It is stated that stone in the kidney has already been determined, and the opacity of glass has led to the detection of small pieces adherent to bone after accident. The similar opacity of lead may render the probe useless in gunshot wounds, except in rare cases as when the bullet is buried in the bone. A new means of distinguishing luxations from fractures is now added to the long list at our command. Obstetricians will readily perceive the immense value of ability to *see* the fetus in utero after ossification of its bones has occurred. The representation of deformed pelves in the living subject, of spondylolisthesis, of calcareous infiltration of various parts, such as arteries, and of exostosis—all this opens up a tempting and promising field for practical research.

Incredible as all this may seem the original skiagraphs photographically reproduced in the annexed plate will convince the most doubting.

The plate[1] shows a number of objects which I have selected at random. In Fig. 1 is represented a portion of the small intestine containing mucus and fecal matter. In this have been placed a penny, a lead pencil, and a gall-stone. The penny is markedly distinct, the lead of the pencil is plainly visible, while the paint of the pencil, rather than the wood itself, has given the outline seen in the cut. The shadow of the irregular gall-stone can be seen. The photographic plate on which this impression was obtained was wrapped in three thicknesses of paper; and in order to distinguish the film-side of the plate, a mark was made in the centre with a lead pencil, and this is also seen in the figure. Fig. 2 shows a portion of a fresh cirrhotic liver, one centimetre in thickness, in the centre of which a number of pins had been inserted. Fig. 3 represents a rib covered over in its central portion with a section of cirrhotic liver tissue, one centimetre in thickness. The blade of the penknife in Fig. 4 was covered with fresh lung tissue, two and three-quarter centimetres in thickness. It would seem that the closer the object is to the plate, the more successful the exposure. Hence it is that some of the objects which have been taken present an appearance not so distinct as the others.

Fig. 5 shows a hand with polydactylism and webbed fingers.

Fig. 6 an ankylosed bone.

Fig. 7 a bullet and piece of glass in a hand preserved in alcohol.

It may be noted that the skiagraphs herewith presented are the results of preliminary experiments. They will be continued by the writer in the physical laboratory of the University of Pennsylvania, through the kindness and courtesy of Professor Goodspeed, to whom is due the honor of being the first in Philadelphia to repeat Professor Röntgen's experiments. It is confidently hoped that the time of exposure will be shortened and the penetration of the rays increased. It will be comparatively easy to obtain pictures of acromegaly, osteitis deformans, gouty deformities, rheumatoid arthritis, etc. Especial attention will be given to the differentiation between organic and inorganic substances, and between those tissues in the human body which react and those which do not.

The easy application of Röntgen's method of taking a picture on a sensitized plate renders its use at once possible in hospitals. The entire cost of such an apparatus need not exceed $50, and this amount will shortly be materially diminished. Doubtless the scientific and commercial ingenuity now being focussed on this process will soon produce outfits at once simple, convenient, and portable, and it is safe to say that most practitioners will then provide themselves with the means of seeing into the mysterious recesses of the body now accessible only by means of the knife.

ROENTGEN PHOTOGRAPHS AND SOME INTERESTING FEATURES OF THE DISCOVERY.

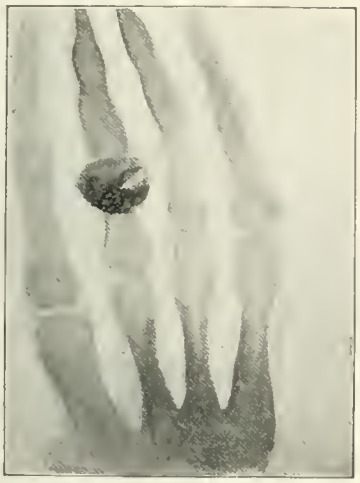
We append herewith two Röntgen photographs taken from *Nature*, January 23d. They are photographs of living hands, and the difference in the two is due simply to the greater intensity of the light. In the first one the flesh of the hand becomes almost invisible, while in the second the contour of the hand and fingers is retained.

In our interest and enthusiasm in this matter, it is well not to lose sight of the fact that there were men who understood this process before Professor Röntgen published his recent article upon the subject. The wonderful penetrating powers of these rays were alreadyknown and had

[1] Opposite page 169

been noted by Hertz, while Lenard, two years ago, had obtained by means of Crookes' tubes shadow photographs similar to those of Röntgen. The feature that is peculiar to Professor Röntgen's discovery and which has so stirred the public interest, and particularly that of the medical profession is that bone is impenetrable to these rays, while the flesh is not, and therefore it is possible to get a shadow picture of the bony structure, not only of the hand, but other parts of the body, by passing these rays through the flesh.

Professor Wright, of Yale, has obtained shadow pictures of the entire skeleton of a rabbit, showing that the rays will pass, not only through the flesh, but also the fur of an animal.



Photograph of the bones in the fingers of a living human hand. The third finger has a ring upon it. [From *Nature*, London.]

Already improvements in method and other discoveries as to the properties of these rays are being made. The opinion of some of the best experimentors is that these rays can be produced in the ordinary electric light bulb. Indeed, the characteristic fluorescence of the cathodal rays has been obtained upon a sensitive plate without the use of Crookes' tube, and it is therefore quite within the realm of possibility that shadow pictures may be obtained in the same way. The length of time necessary to procure a picture by exposure to these rays is also being constantly reduced, from several hours, which was the period originally deemed necessary, to forty, twenty, and even four minutes. The time is doubtless not far off when, as Dr. Cattell has suggested, instantaneous pictures will be taken by this method.

A peculiar feature of these rays is that, although they are capable of producing a brilliant fluorescence by coming in contact with a sensitized plate, they are not visible to the human eye. Even when interposed in the direct path of the rays, the eye is not cognizant of any effect, either of light, or heat, or pain.

We would also call attention to the telegraphic

Photograph of a living human hand. [From *Nature*, London.]

communication in another column of Dr. A. Lapthorn Smith, which probably records the first instance, in this country at least, in which this process has been practically utilized in surgery to locate a bullet lodged in the flesh.—[ED.]

SHALL THE STATE UNDERTAKE TO RESTRICT THE SPREAD OF TUBERCULOSIS?[1]

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FOURTEEN years have passed since Koch announced the discovery that a specific bacillus is the primary cause of tuberculosis, and demon-

[1]Read before the New York State Medical Society, at Albany, N. Y., January 28, 1896.

strated that the disease could be reproduced in susceptible animals. To many careful students who had observed accurately the history of the disease, this announcement came, not as a matter of surprise, but as a confirmation of theoretical conjecture, based on strong reasoning and experimental work with tubercular tissue. These received gladly Koch's communications on the subject, and, in their laboratories, duplicated his methods, reproduced his results, and confirmed the correctness of his deductions. In a short period of time the objection that the characteristic bacillus, admittedly found in all tubercular tissues and in their discharges, was not the cause of the disease, but the incidental accompaniment of it, was silenced by the contemporaneous evidence of experimental observers of all nations.

In a similar way the infectious nature of the virus has been established beyond a peradventure, so that it was long ago proven that tuberculosis is reproduced in susceptible subjects, not only by experimental inoculations, but as readily by the direct inoculation of an unprotected surface by unsought contact with matter containing the specific germ. The investigations of the dust of consumptives' wards in hospitals, of houses in which tubercular patients had dwelt, of churches and theatres and schools and public conveyances which had been frequented and contaminated by those having tuberculosis, have established the fact that the process of drying does not kill the germ, and that after lying dormant for months they are capable of active reproduction, and of initiating the disease of which they are the cause. In the investigation of food supplies from tubercular animals, the same results have been attained, and have been so thoroughly established that our State and many others are now prosecuting a crusade against tubercular domestic animals, for the protection of mankind from this one source of infection.

All these facts have been known to the profession for many years, and for as many years there has been no one to raise a voice against them. Indeed, the younger physicians have been so educated that to them any other possible cause for consumption or for its distribution is known only as a matter of ancient history. But when we search for results springing from this discovery, at all commensurate with its greatness, we are met with disappointment and surprise. By State control leprosy has been banished from civilized nations, smallpox has been robbed of its sting of death, scarlet fever and diphtheria have been limited in their spread, but tuberculosis, with its multiform manifestations, still claims one-fourth of all the deaths for its own. From the forthcoming report for the year, 1895, Dr. Smelzer, the Secretary of the New York State Board of Health, has kindly furnished me these statements:

"The total reported deaths from consumption in our State for 1895 is 13,330. The average reported deaths annually for the past ten years is 12,616." That these statements do not indicate in full the actual deaths from tubercular diseases we all know perfectly well, so that these figures, as appalling as they are, in order to represent the true conditions, must be materially augmented. That such an annual sacrifice of life on the altar of tuberculosis is necessary, not one of us believes.

Modern science teaches that tuberculosis is rarely hereditary, almost always communicated, and, if not preventable, it is at least capable of very great restriction. These ideas are prevalent the world over, and in the most enlightened communities are receiving attention. Our own State Board of Health, though behind others in this respect, has not been unmindful of the importance of this subject. In November, 1894, it formulated a circular letter to be sent to the Health Officers of the State, setting forth the facts here briefly mentioned, requesting the coöperation of physicians in reporting cases of tuberculosis, and suggesting that it might be wise to distribute to those families in which tuberculosis exists information as to how the disease is communicated and what precautions should be observed. Such action is but preliminary, and is not sufficient. Any action on the part of the State Board of Health must have the hearty coöperation of the great body of intelligent physicians, whose representatives are here assembled, and any action to be efficient must be mandatory, not advisory.

From the absolute knowledge in our possession that the infectious material in tuberculosis resides wholly in the secretions from the part affected, it seems possible to restrict the propagation of this disease with more certainty and with less inconvenience to the afflicted and their friends than in any other infectious disease. To secure such restriction, a campaign of education of the people must be inaugurated. The people must be taught the nature of this disease, the methods of its propagation, and the means that must be employed to control it. For this purpose perhaps no plan that has been proposed is superior to that which has been adopted by the State Board of Health of Michigan, and which, in other diseases, has proved

to be of such absolute value for the past twenty years. By this plan it is obligatory upon every physician and every householder to report to the local Health Board every case of tuberculosis. To each patient, and to his friends, and to those who come in contact with him, is sent a circular of information setting forth in simple terms all of the facts concerning the nature, communicability, and necessary preventative measures to be observed to protect himself and his friends from the further spread of the disease.

To secure a universal dissemination of accurate information concerning zymotic diseases, the State of Michigan has within the last year made it obligatory to teach all pupils in the public schools the fundamental facts and practical methods of sanitation in all known infectious diseases. In reply to a letter of inquiry concerning the practical workings of the methods so far adopted, Dr. Baker, Secretary of the State Board of Health of Michigan, says: "Though it is too early to show by statistics the result of this plan, it is noticeable that many people have been set to thinking on this subject, and much interest has been manifested." In one of his able addresses on "Consumption as a Disease Dangerous to Mankind," he states facts "which seem to warrant the hope that the restriction of consumption will prove easier than the restriction of scarlet fever," and on a previous page he has proved by statistics that, since the adoption of this plan in 1874, "The death rate from scarlet fever in Michigan was less than one-half what it had been previous to the beginning of the work."

The campaign of education involves more than the necessary instruction directed to the patient and to his immediate friends, and more than the instruction of the children of this generation. It must extend to all municipalities, to all organizations possessing public halls, to all public passenger carriers, to all architects. A person recently returned from Colorado said: "The streets are fairly slippery from the expectorations of consumptives who are there for their health." We have known a previously healthy person to return from a visit to Colorado with consumption, a symptom of which neither he nor any of his family ever before presented. Dr. Ghion, the late Medical Director of the U. S. Army, said that he was never in such constant fear for his life, not even in the midst of an epidemic of yellow fever, as he was on a journey from New York to Florida by steamer, in a throng of expectorating consumptives going South "for their health." Public buildings must be treated as infected places and cared for as such. Heating and ventilation of such halls must be so carried out as to minimize the possibility of inhalations of dried sputum. Public carriers, like street cars, and steamers, and railroad companies, must be induced to prevent expectoration upon the floor; and such a course is very easy of accomplishment, and far more important to the comfort of the passengers than the regulation of smoking. It is to the credit of some street car companies in certain cities that a prominently-placed placard announces that "Spitting on the floor is not allowed." The inculcation of such instruction, widely disseminated, will make unnecessary the methods employed in some German cities, of placing at convenient intervals on the streets public cuspidors with their unsightly contents. Every one should be taught to protect the public from the discharges from his mouth, as he has been taught from infancy to control the excretions.

That there are difficulties in the way of attaining perfect control of those having tubercular discharges is self-evident. It is to the very fact that the difficulties are so great that the apathy of the profession is to be charged. It may be well to review some of the difficulties that must be surmounted. First of all, what have we, as physicians, to overcome in our own ranks? We are the descendants of our fathers, and have inherited a dislike of telling disagreeable truths. In earlier days, to tell a person he had tuberculosis, or consumption, was equivalent to pronouncing a death sentence. We are not yet free from this thraldom, though we know perfectly well that modern statistics can show a recovery of 50 per cent. of cases detected early. A competent physical examination is often not insisted upon. A bacteriological examination of sputum, in those early cases where little but malaise is complained of, and where physical exploration fails to reveal the first beginnings of the disease process, is very frequently neglected. Often when the symptoms are unmistakable, even to the friends, the doctor yields to the importunities of the family and makes them comfortable by an offhand diagnosis of "bronchial trouble" and omits all hints of danger to any one else. Many object to reporting cases of tuberculosis on the ground that they are unwilling to brand a man as a consumptive and thus blight his life in the community in which he lives. Thus, in our own ranks we must overcome errors that are directly traceable to carelessness and sentimentality.

Among the intelligent people there is little to overcome save pardonable ignorance. Con-

sumption is so very common that the people feel at home with it. It is considered a terrible affliction, but one so often observed that familiarity with it has bred more than pity.

The intelligent people need but this specific education. They need but to know that this fell destroyer is capable of control, that to control it it is but necessary to destroy the virus contained wholly in the discharges from the diseased organ, and the assurance that, in its control, the loved victim need suffer no curtailment of his inherent rights, no diminution of their tender care, and that in a careful observation of sanitary regulations, he is not only protecting them, but is, by so much, making his own cure the more possible. And they need to realize the necessity of an early and accurate diagnosis, and the danger of neglecting the first beginning signs of enfeeblement.

With the ignorant poor, and the wilfully careless and the vicious, the case is not so simple. Because of the greater difficulty in educating these classes, it is a question if it would not be wise at the start to empower health boards to isolate, in specially adapted hospitals, such as will not or cannot conform to the regulations for home care. That certainly will come in time, for, as soon as a public sentiment in favor of the restriction of infectious diseases is firmly established, just so soon will the people force those put in charge of the public health to compel an observance of sanitary laws on the part of the wilful and the ignorant.

If we are profoundly convinced of the possibility of restricting the ravages of this scourge of mankind, shall we escape deserved censure for not making a vigorous effort, because there are difficulties in the way?

No timid, half-hearted, apologetic and advisory action will ever win the coöperation of the profession and the respect of the people. But if the plain facts are vigorously stated, that tuberculosis is a curable disease, a contagious disease, and a preventable disease, and that with the coöperation of the people of the State, every one of whom is vitally interested, the number of cases can be diminished 50 per cent. in ten years—as is firmly believed—I predict that we should have such strong support from the more intelligent of our citizens that the ignorant and the vicious would be speedily compelled to conform to the prescribed sanitary regulations.

To summarize, the following conclusions may be drawn:

1. Tuberculosis is an infectious and curable disease, capable of restriction.

2. That the State should compel the registration of every case of tubercular disease.

3. That circulars of information as to the nature, communicability, and sanitary care of all tubercular disease should be sent to those afflicted with the disease, and to those attending them.

4. That instruction as to the nature of contagious and infectious diseases, and the practical methods for their control should be given to all senior pupils in public grammar schools.

5. That all owners and trustees of places of public entertainment, including churches and schools, and all public carriers should be required to prevent contamination of their halls and conveyances, and to disinfect them when contaminated.

6. That the hopelessly ignorant, wilfully careless and vicious afflicted with tuberculosis should be isolated in special hospitals provided by the State.

THE TREATMENT OF MALIGNANT TUMORS IN SO-CALLED CANCER CURE INSTITUTIONS.[1]

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It is rather my purpose in this paper to invite a discussion upon the subject of what is claimed for and accomplished in the so-called "cancer cure" institutions, than to enter widely upon its consideration. It is known to all, that people afflicted with what is, or what they are told is malignant disease, seek relief from their afflictions at the hands of these "cancer specialists," both because of their fear of the knife, and the glowing promises made for their certain cure by escharotics. The claims of these cancer hospitals are set forth in very seductive language and the most positive assurance is given that their method, and only their method, can effect a permanent cure.

While not aiming a blow at any single institution—as my intent is rather to discuss methods and results—my attention has been particularly directed to the work done in one of them, and I assume that this work is the type of all.

In the pamphlets issued by this and similar institutions, it is stated in vigorous language, that the knife fails to cure more than ninety-five per cent. of the cases operated; that the only argument in favor of operation upon cancer of the breast, for example, is that it can be done in from one to three hours, and the wound healed in from

[1] Read before the New York State Medical Society, January 28, 1896.

two to four weeks. But in the same breath we are assured that such a procedure is certain to witness a return of the disease in worse form, and that the arm on the diseased side is sure to be impaired and in many instances rendered entirely useless.

It is further stated that the entire profession recognizes the inability of the knife to remove the disease, and hence recommends operation, only as a last resort. Moreover, the most serious objection to removal of the breast by operative measures, we are told, is that the surgeon is unable to determine, be he ever so skillful, whether or not he has removed the last vestige of the disease, while the escharotic method entirely circumscribes the mass, protects the healthy parts from further invasion, and when the slough has separated there remains a granulating wound so absolutely bloodless that one is enabled to determine what portion, if any, of the disease still remains. We are further informed that if any cancer cells exist, they positively stare you in the face, and that they can be at once removed by this same method. It appears furthermore, that the particular remedies applied are of secondary importance, and that the value of the treatment lies in this ability to determine whether or not the disease has been removed, and only their particular method renders this possible.

The claim is further set up that no other known method is as painless, and produces so little inconvenience; that the pain is never severe enough to prevent sleep, nor to confine the individual to her room.

It is asserted by one of these institutions, that up to the present time, there never has been a failure to effect a permanent cure in any case in which their physicians were able to give a favorable opinion. To use their own statement, "We can truthfully say, that we never fail to cure any case of cancer, where we have had and accepted the first opportunity for treatment," and this is from the institution of which we will hear more in detail. In a circular at hand, we learn that more than three-quarters of all physicians and surgeons in good standing in the United States, indorse their method. The serious charge is made that the surgeon is aware of his inability to cure this disease, and that for mere pecuniary gain and absolutely for no other reason, he performs an operation, knowing full well that it cannot prolong life, but in reality shortens it, as the disease is certain to progress more rapidly after than before operation.

What these "cancer specialists" designate as cancer and treat as such, is perhaps summarized best in one of their published statements, which I quote verbatim: "Nearly all those lumps and kernels that appear on or in the breast, and all those sores, lumps, or unnatural appearances in the form of crusts, warty excrescences, which occur in either sex, but far more commonly in the male, on the lip, nose, eyelids, face or any part of the surface, are cancers, and should have immediate attention. The only symptoms for months, and in many cases for years, are occasionally a stinging, shooting, burning, itching or creeping sensation, and in many cases not even any of these. If you have a branny, scaly, crusty or warty appearance, with an occasional exfoliation of the same upon the face, lip, nose, or any other portion of the skin, attended with any of the above symptoms, or giving an occasional sensation as though a fly had alighted upon the part, or a hair were tickling it, the evidence should be conclusive that your trouble is cancer, and no delay should be made in having it cured. Life is far too valuable to be tampered with or sacrificed."

We are assured that the time required for the cure of these cases by escharotics is quite brief. The enticing statement is made in a pamphlet issued by an institution, whose work I shall presently analyze, that by recent improvements in their method, they are enabled to shorten the stay of their patients, so that for cancer of the breast, even though extensive, three to five weeks suffices, and in the less severe cases the period is proportionately shorter. In another institution, as low a period as two weeks is given. Each case, however, can be and is told approximately, how long a time will be required to effect a cure, after the preliminary examination has been made.

Unfortunately, many of these institutions are in the hands, not of ignorant, uneducated pretenders, but men who have been liberally educated in the arts and are graduates of recognized medical schools.

My attention was particularly called to this subject by the treatment a lady who had previously been under my care received in what is claimed to be the largest and most successful of the sanitariums for the cure of cancer in the United States. Certain it is, this institution in the printed circulars it issues, makes the most extravagant representations as to the simplicity, painlessness, brevity, and efficiency of the treatment.

To place in bold relief, however, the actual condition of things as opposed to the false and untenable positions taken by the so-called "can-

cer specialists," allow me to present to you not only the history of this patient, but also what was unearthed during her stay in this cancer hospital.

Mrs. A. consulted me November, 1891, when I found present in the outer upper quadrant of her left breast a movable, hard, nodular tumor, which presented the usual appearances of scirrhus. I urged amputation of the breast. She was fearful of the knife and would not consent. For a year I had her under observation, during which time the growth made very slow progress, remaining freely movable, excepting as it grew toward the surface, where it became quite adherent to the skin. However, it could be entirely circumscribed, and at no point was it attached to the chest wall. There were no glandular enlargements recognizable in the axilla. The continued presence of the tumor and the diagnosis given naturally alarmed her, and without seeking further medical advice, she placed herself in a widely known "cancer institution."

She entered it September 19, 1893, and was assured that her case was a promising one and that a cure was certain. Fourteen months of treatment—I might more truthfully say of torture—were spent here. Her husband states that the first application was made at 10 o'clock in the morning, and that until 4.30 in the afternoon she was almost wild. The application was repeated on three consecutive days, and afterward every three to four weeks, during the period of her stay. Widespread sloughing resulted. She became steadily more emaciated and enfeebled until, on the 10th of October, 1894, she was obliged to take to her bed, and then was told she had pneumonia. On the night of November 5, 1894, she was carried out of the "sanitarium," placed upon a train, and transported home. On leaving the institution, her medical attendants declared that there was no trace of the malignant disease left, that she was entirely clear of every vestige of cancer.

I saw her on November 11, 1894. Her pulse was so feeble that I could scarcely feel it; the respirations were 24 and the temperature 99.

At the previous site of the left breast, instead of a mamma, there was extensive scar tissue. Midway between the mammary and axillary lines, on a level with the third rib, there was an unhealed area. This side of the chest presented patches of dullness. There were no râles and but a small amount of air entered the lung. The entire right lung was likewise infiltrated, presented no râles, but only admitted a small amount of air. From this date she gradually failed until she faded out, December 14, 1894.

After death, as she was placed in the recumbent posture, a position she could not fully assume during life, a large amount of serum poured out of the chest, through the unhealed area on the left side which opened directly through the chest wall into the left pleural cavity. Pleural adhesions existed on all sides. Each pleural cavity contained serum. The left lung was filled with small secondary deposits, but at no place was there direct extension inward, from the surface, nor was there any involvment of the ribs. The right lung was very much contracted, solidified here and there, and saturated with secondary growths, varying from one-half to three-quarters of an inch in size. The heart wall was thin and flabby. There was no evidence of secondary involvement of any other organ.

While at the institution, her husband had been her constant attendant. He became well acquainted with the various inmates, and as a matter of personal interest, formulated a table which records the names of all the inmates of the institution, at the date of admission of his wife, *i.e.*, September 19, 1893. His table notes the residence, the respective age, sex, date of admission and dismissal of the various patients, the site at which the disease was located and the ultimate termination of the various cases.

Let me present to you these statistics. Whether they are better or worse than we could obtain from the same institution at other times, or whether this tabulated statement tells the full truth for all time, I cannot say. Certain it is that these "cancer specialists" do not publish their statistics and that it is rarely we can ever obtain exact information concerning them.

To avoid any legal entanglement, as I am not desirous of courting a lawsuit, I do not mention the name of the institution. I can assure you, however, that my statistics are absolutely trustworthy and that they are presented as furnished me.

It appears that there were twenty-six patients in the "hospital" September 19, 1893. These are classified in four groups. The first contains ten cases of cancer of the breast and includes my patient. All of these had been subjected to the treatment and each one of the others was dead when my patient passed away, December 14, 1894. One of these after a period of treatment of five and a half months died in the institution. Another lived ten days after her dismissal; still another died in four weeks, my patient in six weeks, and yet another in two months. None lived longer than nine months. One of these was under treatment in this institution for a period of one and a half months, one four and a half, one five and a half, and the remainder from nine to fourteen months, with an average of eight months for the ten.

In the next group are placed six cases who were under treatment for periods of five months, seven and a half months, eleven, twelve and fourteen months, respectively, with an average of ten months, and who after this prolonged period of torture were finally pronounced hopeless and sent home to die. How many of these are dead I cannot state, inasmuch as their cases have not been followed up. In this class the breast was involved twice, the uterus once, and likewise once, each, the eyelid, lip and face.

In the third series were eight cases indicated as not having recovered. Of these, four were of the breast and four were epithelioma of the face, one being described as being the size of a "hazelnut," the second of a "bean," the third as "trifling," and the fourth involving the face and nose, and is marked as having again developed. The latter, therefore, should not be included in this group, nor should one of the breast cancers, which also has given evidence of return.

The two remaining cases are classified as doubtful, inasmuch as there was fear of recurrence of one where the breast was involved, the treatment having been prolonged for a period of eight months, and the second one marked as a slight case affecting the nose, she having been an inmate of the institution for four and a half months.

To summarize then: Of the twenty-six patients, ten were dead at the time the cases were tabulated, six were pronounced hopeless, three more had the cancer recur and seven believed themselves to be cured. Among the latter, four certainly were very trifling affairs. Whether all of these were positively cancerous, there is grave question, and whether all so indicated and not heard from have remained free from recurrence I cannot state. But were we to concede that they all were cancers and that none had recurred, the results still make a frightfully bad showing.

When we compare these results with the fair promises held out by these institutions of the certainty of cure, where the patients are accepted for treatment and assured that their cases are favorable for escharotic treatment, it becomes at once apparent what an awful misrepresentation these institutions make and how great the imposition is.

The statement, as you will recollect, is made by them that the regular profession resort to the knife simply for pecuniary gain. The husband of my patient informs me that he paid $50 per week for the so-called treatment of his wife during the entire period of fourteen months, and this included neither her board nor room, but was simply for the so-called "professional visits" of

PATIENTS UNDER TREATMENT, SEPTEMBER 19, 1893.

Name.	Residence.	Age.	Sex.	Admitted.	Dismissed.	Site.	Died.	Remarks.
Mrs. M. A. J.,	Philadelphia, Pa.	72	Female.	June, 1893.	April 10, 1894.	Breast.	April 20, 1894.	
Mrs. J. K. C.,	Iowa.	50	Female.	March 22, 1893.	Dec. 18, 1893.	Breast.	August, 1894.	
Mrs. R.,	Ohio. [Can.	50	Female.	March 1, 1893.	Jan. 19, 1894.	Breast.	Sept. 1894.	
Mrs. E.,	Sussex Corners,	62	Female.	Jan., 1893.	Feb. 20, 1894.	Breast.	April 15, 1894.	
Mrs. R.,	Boston, Mass.	45	Female.	July, 1893.			Nov. 16, 1893.	Died in the Institution.
Mrs. K.,	Whitten, Iowa.	53	Female.	June, 1893.	Dec. 4, 1894.	Breast.	May, 1894.	
Mr. W.,	Washington, D.C.	70	Male.	Sept. 15, 1893.	Oct. 30, 1893.	Near nipple.	June, 1894.	
Mrs. S. A.,	Syracuse.	44	Female.	Sept. 19, 1893.	Nov. 5, 1894.	Breast.	Dec. 14, 1894.	
Mrs. J. L. 1.,	Mass.	40	Female.	August 1, 1893.	Dec. 24, 1893.	Breast.	Sept. 1894.	
Mrs. D.,	Pultney, Vt.	60	Female.	October, 1893.	March 3, 1894.	Breast	April, 1894.	
				GONE HOME TO DIE. HOPELESS.				
J. D.,	Lodi, Cal.	55	Male.	July 4, 1893.	Sept. 15, 1894.	Face.		Hopeless.
Mr. T.,	Sacramento.	50	Male.	August, 1893.	August, 1894.	Lip.		Has some hope yet; trifle.
Mrs. B. W. F.,	Milwaukee.	60	Female.	Oct. 14, 1893.	March 3, 1894.	Womb.		
A. Mc.,	Worcester, Mass.	52	Female.	Nov. 24, 1893.	October, 1894.	Breast.		
G. C.,	Boston, Mass.	45	Female.	April 1, 1893.	March 13, 1894.	Breast.		[quite hopeful.
Mr. V. B.,	New York.	50	Male.	May 15, 1893.	Dec. 30, 1893.	Eye.		Again developed, but is
				NO RECURRENCE OF DISEASE.				
Mrs. P.,	Nebraska.	45	Female.	July 15, 1893.	June, 1894.	Breast.		Dr. V. said would return.
Miss B.,	Hartford, Conn.	50	Female.	August, 1893.	Nov. 28, 1893.	Breast.		
H. W.,	New Orleans.	80	Male.	Sept. 1, 1893.	March 1, 1894.	Face.		Size of a hickory-nut.
Mrs. N.,	Mass. [N. Y.	33	Female.	August, 1893.	Dec. 30, 1893.	Breast. [nose.		
Dr. C.,	Holland Patent,	70	Male.	July, 1893.	August, 1894.	Face and		Has again recurred.
J. C. H.,	New Brunswick.	50	Male.	Sept. 1893.	Nov. 29, 1893.	Forehead.		Trifling.
Mrs. B.,	Glens Falls, N. Y.	55	Female.	July, 1893.	Dec. 4, 1894.	Breast.		
Mr. W.,	Conn.	55	Male.	Sept. 1893.	Oct. 30, 1893.	Cheek.		Size of a bean.
				DOUBTFUL.				
Mrs. W.,	Philadelphia, Pa.	50	Female.	Oct., 1893.	July, 1894.	Breast.		Fearful of recurrence.
Mr. W.,	Oswego, N. Y.	45	Male.	Oct. 5, 1893.	Feb. 21, 1894.	Nose.		Slight case.

her medical attendants. In short, for the "professional treatment," exclusive of all other necessary expenditures in this case, the fees amounted to $3,000.

I am informed that one of the patients in the second group, a man of very limited means, and whose home was in California, was promised a cure with two months treatment. After fourteen months the poor man turned over all the money he had except barely enough to carry him home, with the cancer of the face not only uncured, but much worse than when he entered.

It is unnecessary for me to state to this society how untruthful the charges against our profession are, how absolutely false is the statement that 95 per cent. of cancers treated by the knife do not recover; that it is impossible to reach beyond the disease with the knife in a case where it can be circumscribed; that the prospect is less favorable by operative procedure, and that, in short, all of the claims made by these so-called "cancer specialists" are absolutely unwarranted.

I have not discussed the subject from the standpoint of pretended cures for cancer when the patient has only been afflicted with an innocent tumor. That many of the so-called cures are of this kind, there can be no doubt. This is apparent in the statement quoted which defines malignant disease from the standpoint of these "cancer specialists." To make the table yield the best possible returns for them, I have conceded that all of their cases were cancer. The results are horrible enough at best.

I have inserted the table, which I believe will bear careful study.

SOME PRACTICAL POINTS CONCERNING URINALYSIS IN DIAGNOSIS. THE PART OF URIC ACID IN CERTAIN DISEASES.[1]

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There are two theories as to the part played by the kidney in the formation of urine. The first is that of Ludwig, according to which the process is a purely physical one—partly a filtration and partly a diffusion or osmosis. The blood pressure being increased in the Malpighian tufts, the watery portion of the blood together with some dissolved salts escapes into the Malpighian capsule. In this way the blood is very much thickened by the time it reaches the second capillary network embracing the convoluted tubules, into which has descended the thin aqueous solution from the capsule. Here the thin wall of the blood vessel together with the delicate membrane of the tubule, forms a perfect osmometer, with the dense blood on one side and the thin saline solution on the other. An interchange now takes place, by which a current of liquid sets in from the tubule to the blood, and of the products of regressive metamorphosis, urea and salts, to the tubules, concentrating the fluid in the latter, and making urine of it. The researches of Heidenhain since that time have shown, that in addition to this the convoluted tubules and looped tubes of Henle are concerned in its elaboration. It is, however, regarded as established, that the chief materials of the urine, with the exception of hippuric acid, preëxist as such in the blood and are therefore merely removed by the kidney. Normal urine should be a transparent aqueous fluid of a pale lemon color, varying somewhat according to the amount of liquids ingested and the activity of the skin.

A few minutes after being passed there is usually a faint cloud of mucus derived from the genito-urinary tract. In females this cloud is apt to be more marked, in consequence of a large amount of epithelium from vagina and vulva.

The reaction of healthy mixed urine, *i. e.*, of twenty-four hours, is always acid; a few hours after a meal it may become neutral or alkaline. The cause of this change in reaction is still disputed, Roberts believing that it is due to an admixture of the blood with the elements of food, which is largely alkaline, Bence Jones contending that it is caused by the large amount of acid gastric juice which has been extracted from the blood during digestion; probably both enter into the causation.

Normal specific gravity is about 1020. When from the action of cold or other cause the skin is not acting, and after copious use of water or diuretics, it may descend to 1010 within the limits of health; but when perspiration is copious or a drain of water takes place from some other channel, the urine becomes concentrated, and may be 1030 or higher. The specific gravity is also increased in the first stage of acute fevers, in consequence of the increased amount of solid matters excreted, in the first stages of acute Bright's disease, from the presence of blood, in diabetes mellitus, from sugar. It is diminished in hysteria, in all forms of Bright's disease except the stage of acute nephritis referred to, and in the condition known as cyanotic induration of the kidney, which often attends heart disease. In a general way, the presence of sugar and albumin being eliminated, variations in the specific gravity

[1] Read before the Winona County Medical Society, January 7, 1896.

point to variations in the amount of urea present; lower specific gravity of mixed urine generally means less urea. Normal quantity may be set at about fifty ounces per day.

Now let us consider the nitrogenous products of tissue change found in urine. A great many of these are found in the blood, and but few in the urine. Cholesterin is but rarely found, and is not worth considering here. Leucin and tyrosin are found only in acute yellow atrophy of the liver, in phosphorus poisoning and in rare cases of smallpox, and on this account these crystals may be said to be almost pathognomonic. But by far the most important of this group is uric acid. The term, uric acid, will include all its combinations, urates of soda, ammonium, calcium and magnesium.

Uric acid, like urea, is a product of tissue change, and is increased by: first, excess of nitrogenous ingesta ; second, most febrile conditions where tissue change is going on rapidly ; third, in most wasting diseases, *e. g.* phthisis ; fourth, in diabetes.

It may be decreased by: first, certain diseases of the liver ; second, fasting ; third, vegetable diet—its place being occupied altogether by hippuric acid in the herbivora.

Of much more importance, however, than its formation is its excretion. Roberts says : "It may be regarded as probable that the defective power of the kidney to eliminate uric acid in gout arises from a diminished alkalescence of the blood ;" or, in other words, the uric acid is not in solution in the blood, and is never brought to the kidneys to be excreted ; because uric acid is not soluble in a neutral solution, a slightly alkaline one, or an acid one. It follows on that account, that foods or drugs which render the blood more alkaline have more uric acid in solution, more is brought to the kidneys and more excreted.

The question would then naturally arise. On diminished alkalescence of blood, what becomes of the uric acid ? Sir A. Garrod says, it is attracted differently by different organs, and thus the spleen and liver more frequently contain appreciable quantities than other organs, and further on, "may it not be, that, in some organs as the spleen, the substance of which, if not acid during life, rapidly becomes so after death, while the blood remains strongly alkaline, the uric acid becomes less soluble and more easily retained." Therefore on the administration of a dose of acid, the liver and spleen become more acid and cause increased retention of uric acid in them, while a dose of alkali will diminish their acidity and sweep out the uric acid retained there.

Now I shall endeavor to show how this theory explains a number of pathological conditions. First, headaches. Allan McLane Hamilton says: "An experience of many years has taught me that uric acid poisoning is at the bottom of many functional nervous diseases as well as some organic ones. Many individuals of the gouty habit, without actual classical gout, but with a thousand and one erratic symptoms, are the subjects of headaches, which rapidly disappear when a proper alteration of habits and food is made, and when they are placed upon remedies of a suitable nature. The subjects of such headaches are often men, and more usually those past middle life, though the headache of uric acid is confined to no particular age." If we take a typical case of uric acid headache, we will usually find it to begin shortly after breakfast, continue all day with some variations in severity, and at night usually disappear. This corresponds to the time when uric acid is circulating freely in the blood. It comes on after several days of well being, wherein the patient has had a good appetite and partaken freely of meat, and has also had considerable exercise, both bodily and mentally. We now find that the commencement of the attack corresponds to the period of most marked alkalinity of the blood; this alkaline tide sweeping out the uric acid from liver and spleen, which has been stored up during the acid tide period of sleep (if I may be so allowed to call it), and which now acts as an irritant. This irritation causes contraction of blood vessels throughout the entire body; it is not unlikely then that it may produce spasm of blood vessels in certain vascular areas, especially in the pericranium, which is the accepted theory of migraine. This will readily explain the morning headache due to excesses in wine and beer the previous night.

Sir A. Garrod, in speaking of acidity, says that fresh fruits diminish acidity through conversion of their vegetable salts into carbonates; and this, I think, gives us the key to the whole matter. Wines, ales and beer may all be regarded as solutions containing a very small amount of albuminoids, a certain amount of alkaline salts and a certain amount of acid, either free or combined; and it is obvious that if the alkalies or the vegetable salts which can be converted into alkaline carbonates predominate, the beverages will act as doses of alkali, while if the acid and acid salts, incapable of conversion, predominate, they will act as doses of acid, and we get the uric acid precipitated and

retained until the blood is rendered more alkaline, and thus, from the excess in the circulation, we get headaches.

I have under observation at present a man who has suffered with headaches at intervals of two or three weeks for a good many years, and on my explaining this theory to him he readily agreed to some little experiments, and we found that by having him eat freely of meat for several days, and at the same time drink acid drinks, the urine became very acid and the uric acid in it diminished; then, upon giving him a large dose or two of bicarbonate of potash, he promptly got a headache, with increased excretion of uric acid, and this headache could again be promptly stopped by giving half dram doses of dilute nitrohydrochloric acid, showing very clearly that in the first place the acid was retained and then rapidly excreted under the potash, and again retained on giving the acid. A singular thing, too, is that an acid will not only prevent or cure a headache of this kind for a day or two, but for weeks. The most rational explanation of it is that the retained uric acid becomes converted into urea; and the fact that uric acid given by the mouth does not increase the amount in the urine might be regarded as evidence of uric acid being thus convertible. Indigestion and headaches are sometimes intimately related. Suppose, then, the uric acid present: it either directly irritates or by other means interferes with the circulation in the liver and spleen, in this way bringing about congestion of these organs and catarrh of the stomach, with indigestion, following this nausea and diminished appetite; then later on comes the fall in acidity with plus excretion of uric acid and headache. Closely related to headaches is that "tired feeling," a feeling of mental depression, coming on in the first warm days of Spring, when blood "purifiers" are so much in demand. Examine the urine of those patients and you find it loaded with uric acid, and this is what causes the depression. During the cold months of winter there is usually a large ingesta of meat and a very inactive condition of the skin; consequently the blood is liable to lessened alkalinity and consequent deposit of uric acid. In the first warm weather the skin becomes more active, there is a large loss of the acid portion of the blood from that channel and the blood becomes more alkaline, washing out from the liver and spleen the stored up uric acid.

As to gout, all are agreed that it is merely the result of uric acid driven into the joints.

Sir A. Garrod has pointed out that the cartilages and ligaments of joints are less alkaline than the blood and tissue fluids in general, so that if uric acid is retained in the spleen and liver because they are less alkaline than other organs and tissues, it may be retained in the fibrous tissues and cartilages of joints for a similar reason. Further, the joint structures are less vascular than the liver and spleen, and will be but slowly influenced by blood changes. The most common way in which uric acid comes to be driven out of the blood and deposited in the joints, is by a rise of acidity, but any drug which diminishes the solubility of uric acid, *e. g.* lead and iron, will act in the same way; so that gout is simply a retention of uric acid in a joint, and the cure of that attack is simply a washing out of the urid acid by salicylates, alkalies or colchicum, which latter Broadbent thinks acts as an alkali.

There are two classes of people who usually have gout; the rich, overfed and under exercised, and a certain class of men who work in the water about wharves and docks. This latter class illustrate the theory laid down very nicely. They are constantly drinking cheap beer, which is strongly acid, and their clothing, constantly wet, checks excretion of acid perspiration. Result—deposited uric acid.

Closely allied to gout is acute rheumatism. Flint, in his *Practice of Medicine*, says: "There is a growing belief that acute rheumatism belongs to the class of infectious diseases, and is caused by the presence of a specific micro-organism. The course of the symptoms of the disease can be better explained upon this supposition than upon any other which has been suggested." Gout is due to uric acid and is cured by sal. of soda, with an enormous excretion of uric acid. Rheumatism is cured by sal. of soda, also with an enormous excretion of uric acid. Besides salicylates the only drugs which have obtained any great repute in the treatment of acute rheumatism are the alkalies, and these again promote a free excretion of uric acid. Then again, exposure to cold and wet in a young person will produce acute rheumatism; in an older one gout. Meat, beer and wines are harmful in rheumatism, also in gout. Again, nature if left to herself, generally tries to right matters in any pathological condition. And in this particular case her first endeavors are to render the blood more alkaline and the excretion of uric acid greater by pouring out a strongly acid perspiration. In the face of this it is difficult to see why a microbe should be necessary to explain the symptoms of rheumatism and not of gout.

It is pretty generally conceded that migraine is due to a tetanus in the muscular walls of the vessels of the affected part of the head, and if this be so, and some cases of epilepsy are due to spasm in certain other neighboring regions, and if the spasm in the case of the headache is due to uric acid, it is but a small step to suppose that the epileptic spasm may be due to the same cause. Now, from experiments by different observers, we find, that before an attack of epilepsy the amount of uric acid is very much diminished, while during the attack it is secreted freely, showing that while it is stored up it causes no trouble, but when it begins to circulate freely we get the attack. I do not mean to say that all epileptic attacks are due to uric acid, but I think some are, or rather to its effects on the arterial tension and cerebral circulation, and I think also, where there is an organic cause, such as a thickened membrane or a depressed fragment of bone, which is constantly present, and the attacks occur only occasionally, that these attacks may be precipitated by the vascular changes brought about by the uric acid.

I shall not go into the action of uric acid in the causation of diabetes and Bright's disease, as I hope on a future occasion to have an opportunity of discussing these diseases in the other half of this paper; but we have all noticed that a large percentage of our public men in recent years have died of one or other of these diseases. These men, generally speaking, were high livers, and we may presume did not take a great deal of physical exercise, and as a result had a good deal of uric acid in their blood. This had to be excreted and an irritation of the kidneys may have been set up by it, but this would not account for the presence of a foreign albumin in the blood, and Semmola, of Naples, is authority for the statement that such an albumin does exist in Bright's disease. He also states that an albuminuria may be produced among other things by deficient activity of the respiratory and metabolic functions of the skin, and uric acid, when it causes high tension, contraction of the peripheral arterioles and coldness of the skin and extremities, brings about just those conditions which will interfere with proper activity of skin function; it will thus produce albuminuria, and the albuminuria will eventually produce nephritis.

The relationship of glycosuria to gout has long been noticed, and it has long been observed that they alternate; when the gout is bad the sugar is absent, and when the attack of gout is passed the sugar returns.

Now, in speaking of gout, we arrived at the conclusion that during the attack the uric acid was in the joints. Consequently it was not in circulation, and therefore did not set up the irritation necessary to produce the glycosuria, and after the attack had passed or been treated for some time, it was in circulation and did cause glycosuria. Just once more: Dr. F. Staples a short while ago mentioned to me the fact that he had observed a close relationship between uric acid and asthma, and instanced some cases. I find a scant literature on that subject, but its well known action on the arterioles, either directly or indirectly, will undoubtedly cause asthma in a case thus predisposed.

It follows from what has been said that the best treatment of these diseases is to diminish the formation of uric acid, urea and acids, as far as is compatible with healthy function, and to use some means of diminishing acidity, so that nothing should interfere with the free excretion of all uric acid formed.

These indications are best fulfilled by reducing very greatly the animal food, eating largely of fruit and vegetables and avoiding beer and wine. Exercise, although it increases the amount of uric acid, does not raise acidity, and, indeed, may even lower it. So that it promotes rather than hinders the excretion of all uric acid formed. Drugs are useful at a crisis and to prevent the continuance of severe symptoms, but the only treatment that goes to the root of the matter is prevention by diet. Of the drugs that promote excretion salicylate of soda stands first. It combines with the uric acid and forms the highly soluble salicyluric acid. Next in order come the potash salts, but contrary to my early teaching I find that lithium is of no value whatever in these cases, but really does harm. No doubt the urate of lithium is very soluble, but lithium does not get a chance to combine with the uric acid to form urate of lithium. Given internally it forms a nearly insoluble triple phosphate with phosphate of soda or with the triple phosphates of ammonia and soda; it thus practically removes from the blood one of the well known solvents of uric acid which is generally present there.

A BILL to abolish the office of Coroner in New York State in accordance with the provisions of the new constitution, and the suggestions of the State Medical Society has been drawn and will soon be introduced in the Legislature. Its aim is to restore to the legal system of the State the judicial functions now exercised by the Coroner and to make the examiners purely medical officers. Coroner's juries will consequently be abolished.

THE SYMPTOMS AND DIAGNOSIS OF THE INDIGESTION OF STARCHY FOODS.[1]

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There are many reasons why the text-books are silent upon the subject of this paper. The ease with which the contents of the stomach can be examined, the accuracy with which the effect of pepsin can be estimated, the zeal and energy of the manufacturers of digestive ferments have placed our knowledge of gastric digestion in a very satisfactory condition. To one who will carefully study the accurate work of Hayem and Winter, and who will follow their teachings, the chemistry and physiology of the gastric fluids are well understood. Yet, after all, the gastric may be stated to be only the preliminary to duodenal digestion. And that gastric digestion is not even essential, is shown by observations of Czerny, who demonstrated that a dog could live for five months after his stomach had been removed.

The digestion of starches, it is well known, takes place in the mouth and in the intestine. The older physiologists were of the opinion that the digestion of starches came to an end in the stomach. Kellogg, however, has shown conclusively that starch digestion can go on, under certain conditions, in the stomach. One hundred and forty-nine cases in which starch digestion was especially studied, complete conversion was found in 2 per cent. The conditions under which this is brought about will be considered at a later period.

Starch digestion, according to Brown and Heron, may be represented as follows:

One molecule of gelatinous is converted into *n* molecules of soluble starch.

One molecule of soluble starch—

$$10\,(C_{12}H_{20}O_{10}) + 8(H_2O) = 1.\ 9\,(C_{12}H_{20}O_{10}) + (C_{12}H_{22}O_{11}).$$ Erythro-dextrin. Maltose.

$$= 2.\ 8\,(C_{12}H_{20}O_{10}) + 2\,(C_{12}H_{22}O_{11}).$$ Erythro-dextrin. Maltose.

$$= 3.\ 7\,(C_{12}H_{20}O_{10}) + 3\,(C_{12}H_{22}O_{11}).$$ Achroo-dextrin. Maltose.

And so on, the resultant being:

$$= 8\,(C_{12}H_{22}O_{11}) + 2(C_{12}H_{20}O_{10}).$$ Maltose. Achroo-dextrin.

We will now consider this digestion as it takes place at the various portions in the alimentary canal.

The term buccal dyspepsia has been used for more than a score of years. It was supposed to be characterized by insufficient nutrition, resulting in emaciation, abdominal distention, flatulence, and colicky pains, or abdominal distress, and was due to imperfect conversion of the starches in the mouth. Investigation subsequently showed that this imperfect conversion was but a part, and perhaps a minor part, of the causation, the more important being hasty mastication. The hasty mastication resulted in (1) imperfect breaking up of the starch grains, (2) deficient quantity of saliva, and (3) imperfect insalivation. Since the conversion of insoluble starch into soluble sugar depends upon not only a sufficient amount of saliva, but also upon trituration of the starch grains so that their capsules shall be thoroughly ruptured, and thorough mixture of the saliva with the starch, it can readily be seen how very important is complete mastication. With these three factors in full play, starch conversion is practically instantaneous. Naturally a considerable portion in this form of indigestion—so-called buccal dyspepsia—can be cured by eating more slowly, on the one hand, and by limitation of the starchy foods which are ingested, on the other. This cause of dyspepsia is far more frequent than it is popularly supposed to be, and the neglect to properly appreciate this etiological factor explains some of the failures in therapeutics of those who place great reliance upon the results of the examination of the stomach contents. The careless hurrying of the carbohydrates into the stomach without their being properly acted upon by the ptyalin of the secretions of the mouth is, as I have said before, a very important cause of dyspepsia. Lees has recently called attention to another prevalent error, which is frequently, I imagine, even encouraged by physicians. Too much amylaceous food is taken into the stomach soaked in tea, coffee, milk, beef tea, and other fluids. The result of this is that insalivation is not at all performed, and the ptyalin, quite likely deficient in amount from lack of mastication, is present in such small percentage that it is practically inoperative. The stomach is not expected to originate the digestion of starches; it may, and likely does, continue the process, when commenced in the mouth, for about half an hour. The natural inference from this is that fluids of any kind should not be used while masticating amylaceous food, and the patient should be restricted from the too free use of tea, soups with vegetables, puddings with milk or cream, or boiled farinaceous foods with the same. The results which are obtained in practice tend to show the correctness of the observation. When

[1] Read before the Medical Society of the State of New York, at its ninetieth annual session, January 29, 1896.

we consider that, depending upon the dryness and hardness of the food, from one to three pints of saliva are secreted daily, and that the percentage of ptyalin present (in mixed saliva) is according to Frerichs, .0141, the action of the hydrolytic ferment is by no means insignificant. When, from the causes above mentioned, the amount of carbohydrate food daily ingested, which is necessary for an adult, varying, according to Parkes, from twelve ounces (at rest) to sixteen or eighteen ounces in laborious occupation (practically about two-thirds of the total food), is hurried into the stomach with but little conversion, the results to be expected in the intestines are not far to seek. What the effect of the presence of a large amount of unconverted starch in the stomach may be on gastric digestion, is not, so far as I know, determined, nor, indeed, is it within the scope of this present investigation to inquire.

In the stomach it is admitted that the action of the amylolytic ferment, ptyalin, may continue for about half an hour, its activity being finally checked by the fatty acids, or by the free hydrochloric acid, the latter even if in small quantity. On the other hand, it has been stated that when these acids are in organic combination they may favor starch conversion. Recognizing the amylolytic changes by means of the iodine-iodide test (Lugol's solution; starch, blue coloration; erythro-dextrin, red or purple; achroo-dextrin, brownish; the sugar, maltose or glucose, being detected by Fehling's solution) Kellogg found in the series of cases above mentioned that the purple color of erythro-dextrin was detected in 67.8 per cent., and the brown color of achroodextrin in 17.4 per cent. The conditions under which this unusual digestion takes place are pronounced hypopepsia, or to be more accurate, hypopepsia with hypo-acidity. In fact, the state of starch digestion may be a very good index of the degree of total acidity. When Lugol's solution gives a brown coloration or no reaction whatever, complete conversion of starch has taken place and the presence of sugar can be confirmed by the strong reaction given by Fehling's solution. A suggestion may be entertained that the prompt conversion of the starch into sugar which takes place under these conditions may result in the rapid absorption of the digested starch so that the conditions are less favorable for the development of acid fermentation than in the presence of a large quantity of unconverted starch. With this observation by Kellogg, I leave the subject of starch conversion in the stomach.

The digestion of starches is resumed in the small intestine. Owing to the inherent difficulties of the subject the various processes have not been so thoroughly worked out. As a matter of fact, buccal and gastric digestion are merely preparatory to the intestinal. In addition, here, proteids and fats as well as starches are digested, and failure in one direction must necessarily result in abnormalities in the other. In 1890 Boas attempted to study experimentally intestinal digestion in man. For this purpose he made use of vomited matter obtained by a reflux of the intestinal fluids into the stomach. He also made use of the stomach tube and of aspiration. Naturally the irritation of the stomach tube, even if the stomach had been previously irrigated, would result in some gastric fluid, so that unmixed intestinal fluid cannot be obtained. The subject was experimented with while fasting, and the reflux from the intestines was favored by his decubitus and by massage of the epigastric region. Although this method is not applicable to the study of intestinal dyspepsia in our patients, yet the observations of Boas had a certain practical value in that they demonstrated the influence of bad gastric upon the intestinal digestion. Perhaps the sole result of these experiments, so far as concerns starch digestion, is the statement that patients suffering from *hypochlorhydric* do not suffer from intestinal troubles; in other words this is confirmatory of Kellogg's work, which shows that under these conditions starch is digested in the stomach, and the opportunity for intestinal disturbance from undigested starch is not presented. Another factor of importance in intestinal digestion is the presence of micro-organisms, whereas normal gastric digestion is probably free from them. The conditions favorable to the action of amylopsin are similar to those favorable to the action of ptyalin; namely, moderate heat, a slightly alkaline medium and removal of the changed material from time to time. The ferment in the pancreatic juice, distinctly amylolytic (amylopsin), cannot be distinguished from ptyalin. The digestion of starches results in maltose or glucose, the latter being always the final result. Obviously here we must consider that the effect of the pancreatic fluid on starch may be practically inhibited by the discharge of a large amount of acid fluid through a patulous pyloric orifice in cases of marked gastric acidity —another point at which gastric and intestinal indigestion approach. The *succus entericus* from Lieberkühn's glands is believed to convert starch into sugar, but under what conditions and to what

extent physiological literature is generally silent.

So far as the difference in the digestion of starches at the various points is concerned we may follow Kirke in stating that while the pancreatic and intestinal juices are able to turn the achroodextrin which remains into maltose, and maltose into glucose (dextrose) it is doubtful whether saliva posseses the same power.

The difficulty of reaching the diagnosis of the indigestion of starches in the intestine is already apparent, yet we believe that in a given number of instances it can be arrived at with reasonable certainty. The importance of making this investigation is great when we consider that to the assimilation of changed starch we owe much. On the other hand we have proof—if proof were lacking—that the indigestion of starches is a frequent condition—not so frequent, however, as Coutaret in 1870 would have us believe, 60 per cent. of dyspeptics—by the prevalence and somewhat good repute of dyspepsia-cures based on raw beef and hot water. And when we consider that in France bread has a prominent post on the dietary and in other European countries starchy foods are even more largely employed, the importance of the subject is apparent. In this country, not only does hasty eating, but bad cooking, and the imperfectly raised biscuit and cakes, and other pastry are often saturated with greasy substances, and give us reason to believe that starchy dyspepsia is even more frequent.

Taking up the symptoms of intestinal indigestion as referable to the failure of starch conversion I would place first and foremost constipation, of which the cause is quite likely that the colloid-like unconverted starch does not so readily permit of watery osmosis into the intestine as does the sugar into which it is converted, which acts as a crystalloid. The accumulation of undigested and unabsorbed material may even be considerable and give rise to marked enteroptosis (Glenard). On the other hand diarrhea is comparatively infrequent; however, fermentation may go on briskly so that a large amount of irritating material may be formed and its expulsion take place. Should diarrhea exist it is likely to be diarrhea alternating with constipation and not the persistent one which may characterize other intestinal conditions.

The symptom next in importance is undoubtedly flatulence, especially that which occurs two or three hours after meals. The question here arises as to how much of this may be due to gases from the imperfect digestion of proteids in the alimentary canal. To clear up the question we must refer to the work which has been done upon various sulphur compounds. Baumann in 1880 propounded the theory that the combined or ethereal sulphates found in the urine were an index of the amount of putrefactive products absorbed from the intestine; these are chiefly indol, phenol and skatol; the latter is practically of no importance in this study since it is found almost exclusively in the large intestines (Filati). Indol by oxidation become potassium indoxyl-sulphate, long known as indican. Looking upon indol as the product of bacteria upon the proteids as Kuhne and Nencki would have us believe, and considering with this the view of Pisenti that the amount of indican depends largely upon the activity of the pancreatic fluid we come close to the clinical fact that clay-colored stools, excessive preformed sulphates, and abundant indican in the urine are associated with defective secretion of pancreatic fluid. To Herter and Smith all who study this subject must acknowledge their indebtedness for their exhaustive work upon the preformed sulphates and indican and their relations with intestinal indigestion. Since then we have the proteids as the source of sulphur compounds, the causation of flatulence can be determined by the increased ratio of preformed to inorganic sulphates and by the excess of indican in the urine. Therefore, flatulence as a symptom, when the chemical evidence of proteid indigestion is absent, can with reasonable certainty be referred to amylaceous dyspepsia, with greater reason, indeed, than appears above, because the gastric hydrochloric acid retards bacterial activity, and an excess poured into the intestine markedly interferes with the digestion of starches. Confirmatory of this view is the observation of Kast, that neutralization of the gastric juice with sodium carbonate was followed by an increase of ethereal sulphates. Biernacki practically reaches the same conclusion, when he says that the excretion of putrefactive products is large, with great decrease of hydrochloric acid secreted. The further suggestion can be made that the gases due to proteid indigestion are sulphur-containing and consequently more obnoxious than those of the marsh-gas series of carbo-hydrate origin. Yet it must be borne in mind that gluten associated with the carbo-hydrates is a sulphur-containing body, so that this distinction is not so important as it would at first appear. Coincident with flatulence are the painful phenomena from heaviness, tenderness, and abdominal discomfort to colicky pains. Since flatulence is more marked with starchy than with proteid indigestion, these symptoms are more

prominent. Further, because constipation is an important factor; abdominal heaviness in addition to acute pain is frequently found. Not only are local physical signs, as fullness, tenderness and changes in percussion note more marked than in proteid indigestion, but the general symptoms are more numerous and persistent. The opportunity for absorption of peccant material—to use an old term—is favored by the constipation, but as has been stated, the ptomaines of decomposed starch (amulon-ptomaine) are almost as injurious to the human body as the ptomaines of nitrogenous foods. Therefore we note the lassitude, habitual malaise, general debility (partly from insufficient nutrition), the insomnia, the various sensory symptoms, headaches, vertical, frontal, or occipital, and vertigo. The heart symptoms are prominent, due in part to gaseous distention, and vary in importance from palpitation, cardiac distress, cardiac pain, and tachycardia to syncope. We have also the urticarias, the muddy complexions, cold hands and feet, referable to this cause. We may even observe marked mental changes as hypochondriasis, intellectual apathy and morbid somnolence.

The picture is a familiar one, but we all have doubtless failed many times in not differentiating this particular form of indigestion, and in attributing too much importance to the gastric, to the neglect of the intestinal digestion. After all, the diagnosis by exclusion, for such must be the method employed, and its accuracy can be readily put to the touchstone of clinical experience. Those, in whose persons starch is imperfectly digested, tolerate badly the starchy foods. The causes of the indigestion of starches are: (1) excessive ingestion of carbo-hydrates, (2) imperfect insalivation, (3) hasty mastication, (4) too diluted starch foods, (5) too great gastric acidity, (6) insufficient or perverted secretion of pancreatic fluid, (7) excess or abnormal activity of micro-organisms, (8) intestinal torpor or exaggerated peristalsis, and (9) imperfect absorption of already digested foods.

The diagnosis rests upon the positive evidence of constipation, flatulence, the sensory phenomena, the general systemic disturbances and remote painful symptoms existing in a marked degree, and upon the negative evidence as found in the ethereal sulphate-ratio and the amount of urinary indican. The picture seems clearly outlined, and at the close of our study we may say that the diagnosis of the indigestion of starchy food should be reached with reasonable certainty.

749 MADISON AVE.

CLINICAL MEMORANDUM.

ATAXIC SPEECH FOLLOWING THE USE OF TRIONAL.

BY J. C. WELCH, M.D.,
OF BELLEVUE, PENNA.

THE patient, aged 48 years, was a physician of good mental qualities, and of fine physique, who gave a history of having been addicted to the use of morphia for fourteen years. He administered it by mouth and hypodermically, ordinarily taking two grains hypodermically in the form of Magendie's solution. For a week previous to coming under the observation of the writer, he had been consuming a large quantity of whiskey. During this debauch he lost his hypodermic syringe, so that he was suffering from the absence of morphia, as well as from excess of liquor. He was restless and irritable, had insomnia and slight delirium; also had anorexia and diarrhea.

The patient was put to bed and ordered Trional, gr. xxx., every three hours, Tr. nux vomica, ℥xv., three times a day. Beef tea, milk, and light diet was administered at frequent intervals. The diarrhea was treated with bismuth and salol. During the following four days the patient slept $2\frac{3}{4}$, $7\frac{1}{2}$, 17, and 18 hours repectively. The trional was reduced to gr. xxx. morning and evening. During the next 24 hours he slept 7 hours, and during the next day, 14 hours. He was now noticed to be dull and bewildered, and complained of heaviness and numbness of the limbs, and of great mental depression. His speech was very ataxic; the difficulty of speech was apparently of central origin, and at first a beginning cerebral hemorrhage was feared. In the preceding six days, from two to two and one-half ounces trional had been taken. The administration of this drug was then entirely suspended, and caffeine and digitalis substituted. There was a gradual disappearance of all the unfavorable symptoms, the insomnia not returning. The patient remained in bed twelve days, in his room a week longer, and then went on a sea voyage under the care of a companion, and thus disappeared from further observation.

A MISTAKEN DIAGNOSIS OF HYSTERICAL AMBLYOPIA.

BY DR. HARRY FRIEDENWALD,
OF BALTIMORE, MD.

THE separation of cases of organic from those of functional disease of the nervous system is usually not difficult, especially when the patients can be kept under observation for some time. In some cases of organic nervous disease, however, the proper signs may be entirely wanting for diagnosis; they may be replaced by those that are more or less characteristic of hysterical affections. In other cases, again, the signs of true organic disease and those of functional disorders are so mingled that the diagnosis becomes a matter of the greatest doubt. Thus Dr. Buzzard (Brain, 1890) described a number of cases in which the diagnosis of hysteria had been made, and in time the true nature of the disease was shown to be disseminated sclerosis.

It is useful to call attention to these cases, for they

teach one to be very careful in diagnosis, and especially to go slowly before designating a case as "hysterical." The most careful examination will sometimes not save us from error. In the case which will be reported below, this error was of the most serious nature.

Before describing the case, it may not be out of place to mention that hysterical affections are sometimes met with in ophthalmic practice. The most common are functional disturbances of vision, without any ophthalmoscopic alterations. Central or peripheral vision may be affected. The fields of vision for the several colors and for white are usually altered. The case which is to be presented in this paper is one in which the diagnosis of "hysterical amblyopia" was made.

Mrs. A., aged 40, consulted me May 23, 1892, complaining that her vision had been dimmed for the past three months. The dimness was most noticeable during the day, and varied greatly. She had also had severe headaches. Her menopause had suddenly come on almost one year previously. Her family history was good. No ophthalmoscopic changes could be discovered. The papillæ were normal, excepting, perhaps, a slight pallor of the macular halves. V. R. E. 8/24; V. L. E. 4/60. The field of vision of the right eye was somewhat restricted in its outer and lower portions, but this was rather indefinite; there appeared to be indefinite central scotomata in both fields. A thorough physical examination did not reveal any symptoms of organic disease, the only exception being a very low specific gravity of the urine (varying between 1010 and 1003). The patient's general appearance and manners strongly suggested a hysterical condition.

The diagnosis of *retro-bulbar optic neuritis* was made. It was believed to have some connection with her menopause. She was treated with the red iodide of mercury, then with jaborandi, and later with mercurial inunctions and iodide of potassium. But her condition did not improve; for some time the vision of the right eye remained the same, while that of the left eye gradually diminished. August 21st, V. R. E. 8/24; V. L. E. could not count fingers, unless very close, and then with greatest difficulty. At this time there was a large defect in the outer lower portion of the left field of vision.

At this time a consultation was held with Dr. X., a well-known specialist in diseases of the nervous system. He was unable to find any signs of organic nervous disease.

The patient was then sent to Dr. Y., an eminent oculist of New York, for it was evident that the diagnosis of retro-bulbar neuritis was at least very doubtful. In that case we should have found definite ophthalmoscopic changes after such a length of time, and yet there were none. The diagnosis had, therefore, been changed to *hysterical amblyopia*.

Prof. Y.'s answer stated that he considered the affection "purely nervous." "There is an indication of sector-like temporal pallor, as in central scotoma." But he could find "no central scotomo, not even for colors. Her field is irregular; in the right, the outer lower quadrant is absent; in the left, the lower half; then again, she saw the hand in the lower half. V. R. E. at first 20/50, then with weakest glasses 20/30. Reads No. 2 Jaeger and should read No. 1, commensurate with V, for distance. The whole disease is a form of neurasthenia, and I am sure she will recover."

The great variations which had previously been noted by me, both in the fields of vision and in central vision, as well as those mentioned by Dr. Y., strengthened me in the belief that the diagnosis, concerning which we were all of one opinion, was correct. But treatment with this view, especially suggestive treatment, was without the slightest effect. Early in October, therefore, it was deemed wise to again have her undergo a thorough examination of her nervous system, and Dr. Z., a distinguished professor of Psychiatry was called upon. He likewise saw the patient a number of times, and concluded that the affection was of a purely functional character. Treatment with ergot, and later with tonics, did not improve her condition. She became somewhat dull, her memory began to fail, and the vision of both eyes gradually diminished. November 20, V. R. E. 8/60, V. L. E. could not count fingers. Still there was no ophthalmoscopic change.

During the latter part of December, as I was afterward informed, her gait became reeling, her limbs became weak, and her mental condition became much worse; she slept a great deal, her memory was very poor, and she spoke very little. At the same time her headaches had ceased. January 1, 1893, she lost control of the bladder, and became too weak to remain out of bed. Her condition gradually became worse, and on January 13th she died with symptoms of cerebral edema.

In the absence of a post-mortem examination, it is impossible to decide as to the cause of her complaints and of her death. But it was evident that the diagnosis of hysterical affection which was made by me, and with which several eminent physicians agreed, was a mistaken one.

There was certainly some organic cerebral affection which ran its course without involving any peripheral sensory or motor nerve, excepting the optic nerves, and produced no symptoms but diabetes insipidus, and toward the end, loss of mental power.

THERAPEUTIC NOTE.

Poisoning with Creosote.—At a recent meeting of the Société Médicale des Hopitaux Faisans (*Presse Médicale*, 1896, No 6) reported a case of chronic pulmonary tuberculosis that was being treated with injections of creosoted oil, 1.15—4½ ounces, representing more than two drams of creosote, being injected daily. The most conspicuous symptoms of the resulting intoxication were nervous in character and included especially delirium and dilatation of the pupils. The renal secretion was diminished and the urine was deeply colored, almost black. The prominence of the nervous phenomena raised a suspicion of tuberculous meningitis, but careful investigation disclosed the condition of toxic pseudomeningitis.

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SATURDAY, FEBRUARY 15, 1896.

PRESIDENT PARK'S ADDRESS BEFORE THE NEW YORK STATE MEDICAL SOCIETY.

Those who attended the meeting in the Senate Chamber at Albany, Wednesday evening, January 29, 1896, were given an intellectual treat unusual in quality.

To a professional man who has made a well-deserved reputation in medicine or in surgery, there is no such thing as leisure. His days and his nights are consumed in the routine of his work, in doing what must be done, and in preparing for what is before him. If he be a teacher in medicine, the demands upon the hours he steals from the night and from his own repose are still greater. He cannot block out his time deliberately, as does the scholar or the literary man. If he gains an insight into the realms of science, or surveys fields of literature not in direct touch with the immediate work in hand, he must do so by systematic use of the momentary intervals that may occur between important engagements.

That by such a method it is ordinarily possible to gain a mastery of such a wide and intricate subject as Comparative Pathology, few of those favored ones who devote their entire time to investigation and thought would allow. But that such has been accomplished by the recent President of the New York State Medical Society, every one who heard him must admit.

There are no words but those of praise, not only for the selection of the subject which, of itself, was an inspiration to those possessed of the scholarly instinct and the spirit of investigation, but also for the masterly manner in which he surveyed the broad field of Comparative Pathology, as well as the familiarity with all forms of life that was displayed in his rapid review of the abnormalities presented by plants and animals. Throughout it all was noticeable a comprehension of the principles of evolutionary science that is rarely observed.

There were two propositions in President Park's address worthy of comment:

The first was, that it would be well if a society were organized for the study of Comparative Pathology, with a membership that would include all workers in each special department in which the abnormalities of every living thing are matters of observation and research. To the common fund of information each member would contribute, from the narrow field in which he worked exhaustively, his richest results and his most mature judgment; so that each, by comparing results attained in other analogous fields, and by determining points of similarity and of divergence, would broaden his own mental horizon and get a comprehensive insight into the general principles of pathological processes in all nature, impossible of attainment by any single worker in one department of life. That such an ideal is a credit to its originator, goes without saying.

The second proposition was, that, under the editorship of some man learned in all departments of nature—say Bland Sutton, for whom the President showed deserved respect—the accumulated observations of all investigators into nature's abnormal workings should be brought together in one work of several volumes; that these should be thoughtfully epitomized for the use of students, and that this condensed volume should be made

a text-book, the study of which should occupy some portion of the last two or three years in all our medical colleges.

The gathering together of the material for such a work is becoming yearly more easy of accomplishment, and that such a "system" will eventually be published seems more and more probable. But the study of pathology must be preceded by a thorough mastery of anatomy, both macroscopic and microscopic, of physiology, including physiological chemistry, and of embryology. Under prevailing conditions of admission to medical colleges, in order that Comparative Pathology may be taught at all, there must first be established competent courses in comparative anatomy and physiology. It is a question if, in a four years' course, there would be any time for the thorough mastery of comparative anatomy and physiology preparatory to the study of Comparative Pathology. The demands of every department in a medical curriculum are constantly increasing. There is now very great difficulty in giving students a fair comprehension of the essential facts which he must master in order to satisfy his college and the State before he can obtain his degree and his license to practice medicine.

If we could relegate to the preparatory course the subjects of botany, chemistry, physics, including electricity and refraction, morphology and histology, then perhaps it would be possible to introduce successfully in all our schools comparative methods in the teaching of anatomy, physiology, and pathology. For the great majority of colleges, however, such a day is far distant, and distant the more since the recent action of the State Society, sanctioning an amendment to the law permitting a student to enter a medical college conditioned on "one or more subjects" at present required by the State before he can receive a "medical student's certificate" which he is now compelled to earn before he can matriculate in any medical college in the State.

In the present state of medical education, he who would gain a competent knowledge of Comparative Pathology must imitate our President and abstract the time necessary for it from the hours of his own rest and recreation, or seek special schools

THE ANTIVIVISECTION BILL IN CONGRESS.

In another column we print a detailed account, by our special correspondent, of the hearing before the District Commissioners on Senate bill 1552, to which we invite the careful consideration of the medical and scientific professions. The bill is printed in full, together with a list of the Senate and House Committees through whose hands this bill will pass, before it reaches the floor for general consideration. These details are given with a purpose. First of all, the medical men of the country should know the exact contents of the bill, and the edition printed by Congress is so limited that it is impossible for our Washington confrères to obtain a sufficient number of copies for distribution. In the next place, it is important for the medical profession to know exactly who the Senators and Congressmen are to whom this bill has been referred for careful consideration. These senators and congressmen should be informed by the medical and scientific men of their respective States of the absolute absurdity of this bill and of its injustice to science, and we urge that members of the profession in the States from which these Senators and Representatives come, take immediate action, and bring the proper information to the attention of each and every member of the two committees.

The suggestion made by our special correspondent that this movement in Washington may be the beginning of a national movement is worthy of attention. The bill, though primarily intended for the District of Columbia, is not one of merely local interest, and if not killed in committee will give the antivivisectors in various parts of the country an unduly exaggerated idea of the justice(!) of their movement. This *local* bill is one of *national* interest to the medical profession. If it is reported to the Senate and the House we may expect to see similar and even more radical bills presented to many of the State legislatures within a short time. Let us all unite, therefore, in making a national fight at Washington, and in giving this bill such a severe and total defeat that it will never again be allowed to see daylight.

We desire to call particular attention to several points in the bill. First of all, the bill is misnamed. The title should read: "A bill for the

prevention of advance in medical science in the District of Columbia, and for the prevention of the application of discoveries already made." This exactly expresses the result the bill would attain if allowed to become a law. The question naturally arises whether the bill could be amended so as to suit all parties. To this we reply in the most emphatic language, No! The bill is too radically wrong to permit of satisfactory amendment.

The very *general* character of the bill should attract attention: "That hereafter no persons shall perform on *any living animal any experiment* calculated to give pain to such animal, except subject to the restrictions hereinafter prescribed." *Any living animal!* That statement is sweeping; and our friends who proposed the bill could not have realized all it implies.

Section 2 deserves especially close attention, for it absolutely prohibits all experimentation in bacteriology; it practically compels the use of ether or chloroform in every hypodermic given to animals, and in the preparation of vaccine; by the provisions of this section experiments to test dogs for hydrophobia are also excluded.

But of all the faulty provisions, section 6 is the extreme *par excellence*. The Commissioners of the District are to appoint an agent of the Humane Society to inspect the laboratories; "special inspectors—who may be willing to act as such inspectors gratuitously," are also provided for. It is but natural that the most hysterical fanatics will make application for such appointment, and we would thus see the surgeon-generals of the Army, Navy and Marine Hospital Service, as well as the chief of the Bureau of Animal Industry made subject to supervision by a local society composed of persons who are absolutely ignorant of the conditions governing the experiments upon which they would report.

Section 5, providing for reports of experiments to be made to the Commissioners, is equally harmful, and would lead to premature publication through the daily newspapers of half-finished results.

The press reports of the hearing before the Commissioners show that the vivisectionists condemned brutality as well as did the antivivisectionists, and all thinking men will agree with them in this. It has not yet been shown, however, that such brutality exists in this country, as the antivivisectionists would have us believe.

Washington is the best place in the country to fight this question out to the finish, for this bill, and *any similar bill* would seriously handicap the workings of the four sanitary departments of the national government, *i.e.*, the Marine Hospital Service, the Bureau of Animal Industry, and the medical services of the Army and Navy, and any legislation which affects their work, more especially the work of the Bureau of Animal Industry, will also affect the State Boards of Health throughout the country; for at the present moment the bureau is furnishing tuberculin and mallein to many of these boards. The present bill would result in stopping this supply of material now used in many States. The attention of the State Boards is called to this point, and we urge them to immediately enter urgent protests against any legislation of this or of similar character.

Washington is perhaps the centre of animal experimentation in this country at the present moment, and we can rely upon our scientists there to oppose this measure to the full extent of their influence, but as we would all be affected more or less directly by national legislation, it behooves the medical profession and the scientific world generally to move in this matter with promptness.

The legal question of making governmental departments subject to revision and inspection by the District Commissioners, or by volunteer inspectors of a local society of laity, is a point for careful consideration.

GENITO-URINARY AND VENEREAL DISEASES AND SYPHILOLOGY.

A CRITICAL RÉSUMÉ OF RECENT ADVANCE: LINEAR ELECTROLYSIS IN STRICTURE OF THE URETHRA.

AMERICAN surgeons many years ago reached the conclusion that electrolysis for the treatment of stricture of the urethra when metallic, olivary tips seated at the end of the flexible bougie were employed, was not curative, and that it might produce a still greater stenosis of the canal. If the electrolytic action, or, we may say, affinity, could be brought to bear on the stricture tissue, and if we could then produce its absorption, the

method of treatment would certainly be an ideal one. Unfortunately this result could not be produced, for when the current was sufficiently strong, the electro-chemical action was expended upon the mucous membrane, the disintegration or destruction of which would occur before the fibroid stenosis could be acted upon. It is thus rendered plain why the treatment was a failure, and its use very often a danger, since by it the mucous membrane, so essential to the formation of a restored urethra, was destroyed, and a ragged, cicatricial canal was left, which promptly became more stenosed than it was before the operation. This having been our experience, and such being our conclusions, it can be readily understood that several genito-urinary surgeons of this city were both skeptical, and even impatient, when a new method of treatment of urethral stricture by electrolysis was brought to their notice by its inventor, Dr. Fort, the professor of anatomy of the Faculty of Medicine of Paris. In a recent essay ("Electrolyser for the Surgical Treatment of Stricture," *New York Medical Journal*, November 16, 1895, and *Traitement des Rétrécessements par l'Électrolyse Linéaire*, Paris, 1894), Dr. Fort describes his instrument, the *technique* of the operation, its immediate symptoms, and its remote results. The author of this review placed at Dr. Fort's disposal fifteen hospital cases of stricture, and has carefully studied the operative methods and the condition of the patients after operation. The electrolyser resembles in a general way Maisonneuve's urethotome when the filiform guide has been attached and the knife has been pushed down the grooved staff. It really consists of two nearly equal parts, the distal one being the filliform guide and the proximal one being a fine, soft bougie (calibre about 6 or 8 French scale), through the whole length of which there is a thin, metallic wire. This wire, just before the junction of the proximal with the flexible distal portion, is bent so as to form an obtuse conical projection, which resembles the blade of Maisonneuve's instrument. This platinum blade, therefore, is the active agent in the operation. The filiform guide is passed down the urethra until the electrolytic blade (as we may call it) rests on the face of the stricture. The instrument is then connected with the negative pole of a continuous current battery and the positive pole, which is flat and of the size of one's palm, is placed near the penis, either on a thigh or on the lower part of the abdomen. The current is then turned on. This should be, in general, of a strength of ten milliamperes, as shown by an attached galvanometer. During the operation, the electrolytic blade remains cool, and is gently pushed downward by the surgeon, and in many cases traverses the strictured tissue in less than a minute; but in very firm, dense, and quite long strictures, two or three minutes may elapse before the operation is complete. In cases in which there are several strictures seated at a distance from each other, more time is consumed. Haste, however, is not at all essential in these cases; indeed, it seems to the writer that a more lasting effect is produced if the blade is allowed to traverse the tissues very slowly. In this way, in all probability, a more potential action is produced. In the judgment of the writer, better results will follow in very dense and extensive strictures if the action of the current is prolonged. In all cases, copious irrigations with mild antiseptic solutions should be used, both before and after the operation. In this connection, it may be remarked that before operation Dr. Fort threw into the bladder, in most cases using considerable force, several, even many ounces of an antiseptic solution, without any untoward result. He did the same after the operation, seeming to care nothing about the force which he exercised upon the compressor urethrae muscle. On the withdrawal of the blade, the evidence of the electrolytic action is seen in the little mass of disintegrated, perhaps slightly effervescent, tissue which comes away with it. In general, it may be stated that the operation is nearly painless; some patients make an outcry from fear, while others complain of a slight stabbing sensation. There may be no hemorrhage at all, or the flow of blood may be slight; it never is sufficient to cause any uneasiness. With our precise antiseptic methods, Maisonneuve's operation may now be done in most cases without fear of sepsis, and, as a rule, little or no fever is present. It is remarkable to observe how free patients operated upon by Fort's method are from febrile movement or any troublesome symptom. The writer was struck by the

calm confidence of the Paris professor in not sending patients operated upon to bed; indeed, in some cases, he allowed them to go out of the hospital, enjoining them to return for subsequent irrigation and dilatation. This course seemed startling to cautious surgeons who, in the past, even when using intelligent antisepsis, were always a little anxious for a patient after a Maisonneuve's operation; still, in more than a dozen cases, the writer has seen no untoward result.

Another point which is to be commended is developed in the after-treatment of strictures thus operated upon by Dr. Fort. He contents himself in these cases with the passage of olivary bougies of a maximum calibre of 24 French scale. In this conservative course he has the warm endorsement of the writer, for it is his firm conviction that if the lumen of a man's urethra, after an operation for organic stricture, can be maintained at a calibre of 24 French scale, that man is a lucky individual, and will be in far better condition (and certainly will not be in jeopardy) than if he were persistently treated with much larger sounds. Judicious treatment of strictured urethrae after operations is just as important as the cutting operation itself. From a study of the fifteen cases already mentioned, the writer is led to think that Dr. Fort's method is applicable to annular and bridle strictures in which the stricture tissue is not exceedingly dense or too exuberant. It is not a treatment, as a rule, by which a route can be tunneled through long, very dense, and copious inodular urethral stenoses. Thus, in the case of a man having a well-defined, not very long or thick stricture, at four inches down the canal, this contraction readily yielded to the electrolyser, while a large, dense, inodular stricture mass at the bulbo-membranous junction was wholly unaffected, and only traversed by Maisonneuve's guide and knife. Again, in another case, there was a stenosis of the urethra beginning just behind the glans and extending into the subpubic course, and having a length of four inches and a calibre of 8 French scale, the electrolyser could make no headway whatever. In this case, gradual dilatation is producing good results. The writer feels confident that many cases of firm stricture in the bulbous urethra may be traversed by Fort's instrument, whereas most New York surgeons would have in the past subjected them to external urethrotomy. The electrolyser may lessen the number of cases of external urethrotomy, but it will not render the operation obsolete. The electrolyser is useful, in that it decomposes a segment of the stenosed urethral canal, and then by destruction of tissue, gives more relief than the thin incision of Maisonneuve's blade, and it does this with precision and almost without hemorrhage. Added to this, there need be no septic complications. Of the ultimate outcome of the operation, the writer cannot speak with authority, but it is fair to assume that if gradual dilatation is regularly, carefully, and persistently followed for a long period, the man may be wholly free from all distressing or dangerous symptoms, and he may void his urine with complacency and comfort.

Robert W. Taylor, M.D.

ECHOES AND NEWS.

Recent telegraphic advices from Santiago de Cuba state that hemorrhagic smallpox is now raging among the soldiers stationed there.

A communication from Denver, Col., February 6, 1896, states that it is currently reported that Schlatter, the alleged new Messiah, has perished in a storm in New Mexico.

An appeal has been made to the general public for subscriptions which will enable the admirers of the late Prof. T. H. Huxley to erect his statue beside those of Darwin and Owen in the Natural History Museum, South Kensington, England. It is gratifying to notice that this very proper tribute of respect to the great English scientist is meeting with substantial encouragement.

Dr. H. Ernest Goodman of Philadelphia died suddenly last week. Dr. Goodman was a prominent physician and connected with the Medico-Chirurgical College and Hospital of that city.

The first meeting of the Utah State Medical Society has given evidence of the good quality of the members of the profession in this the latest member of the sisterhood of States. It was declared the sense of the society "that every member of it interest himself personally in securing the election of men for the next Legislature who favor the maintenance of a high standard of medical excellence in the State of Utah".

In his race for United States Senatorship Dr. Hunter, of Kentucky, displays the true professional tenacity embodied in the homely phrase, "While there is life there is hope."

Dr A. B. Hirsh has been elected president of the Medico-Legal Society of Philadelphia.

Dr. Unna again offers a prize for original work. The subject for 1896 is: "The Behavior of the Epithelial Fibrils During the development of Soft Nævi and Alveolar Carcinoma." The amount offered is 900 marks. For further particulars, the reader is referred to L. Voss, 34 Hohe Bleichen, Hamburg.

"Public Health" is the name of a new quarterly journal of sanitation to be published at Philadelphia by Dr. W. B. Atkinson as the organ of the associated health authorities of Pennsylvania, the State Board of Health and the State Quarantine Board.

At the International Congress of Obstetricians and and Gynecologists to be held at Geneva, Switzerland, in September of this year, one of the questions for discussion will be the "Relative Frequency and most Common Forms of Contracted Pelvis in Different Countries, Groups of Countries and Regions." To Dr. Wm. T. Lusk of New York city, is assigned the duty of collecting information from the United States. He has issued blank forms for reports which can be had on application by any one having observations and statistics to offer.

It is rumored that a new monthly journal to be known as the *Medical Council*, will shortly appear in Philadelphia. Its pages are to be especially devoted to obstetrics, diseases of women and children, including racial improvement.

The Jefferson Medical College of Philadelphia has shown great enterprise in securing Prof. Turck, of Chicago, who began, February 3d, a course of ten lectures, under the auspices of that institution, upon the laboratory investigation of bacteriology, pathology, and upon general scientific research, with especial reference to diseases of the alimentary tract. One of the most gratifying results of these lectures is the stimulus that has been given to individual desire for original investigation, and a general awakening to the importance of well equipped laboratories for such work.

The number of students attending the medical department of some of the German universities for the Winter, semester of 1895-1896, is as follows:

	Natives.	Foreigners.	Total.
Berlin . .	883	375	1258
Munich . .	516	677	1193
Wurzburg . .	182	532	714
Leipsic . .	347	320	667
Erlangen . .	187	187	374
Greifswald .	316	35	351
Freiburg . .	85	240	325
Breslau . .	310	6	316
Strassburg .	160	152	312

It is stated that on the 10th inst., at the experimental laboratory of the Central Röntgen Association in Berlin, there was presented for examination, a young seamstress who had swallowed a needle the week previous. She had constant hematemesis and other symptoms of ulceration. The X-ray revealed the needle lying point downward in the right lower part of the stomach. Considerable ulceration being present, it was resolved to operate at once. The patient was placed under chloroform and the needle found as indicated and removed. The patient is progressing favorably.

It is reported by cable from Berlin that Professor Brieger has finally succeeded in freeing the diphtheria toxin from all albuminous compounds. In an article in the July number of the *Zeit. f. Hygie. Infect.*, Professor Brieger stated that as he obtained the toxin more and more nearly in a pure state, the chemical reactions became less and less, and he there stated that he believed these reactions were due to the albuminous compounds thrown down with the toxin and not to the toxin itself. If he has actually obtained toxin in a pure state, he has accomplished an important advance, which may lead to the discovery of methods of separating the toxin, and possibly to manufacture it chemically.

At the annual meeting of the Kings County Medical Association, the following officers were elected: President, J. C. Burwirth; vice-president, L. A. W. Alleman; recording secretary, F. C. Raynor; corresponding secretary, J. Scott Wood; treasurer, E. H. Squibb; member executive committee, Jonathan Wright.

Dr. Geo. M. Gould, 925 Walnut street, Philadelphia, requests librarians of medical societies, colleges, and associations to send him lists (with precise dates, etc.) of such periodicals as they need to complete their files.

He also begs physicians (or legatees) to send him accurate lists of such periodicals (or books) as they are willing to donate to libraries. Lists only are desired, not the periodicals themselves, until, after correspondence, it shall have been determined: 1. Where they are needed; 2. Where they will be properly cared for; 3. Where they will do the most good to medicine.

It is Dr. Gould's intention to aid established libraries in completing their files by thus forming a kind of (gratis) Exchange, and to encourage the formation of new public medical libraries by utilizing some of the vast number of valuable medical publications at present going to waste or destruction.

NEW INVENTION.

A CONVENIENT INSTRUMENT FOR VISUAL USE IN DIAGNOSIS WITH THE ROENTGEN RAYS.

By W. F. MAGIE Ph.D.,
PROFESSOR OF PHYSICS IN PRINCETON COLLEGE,
PRINCETON, N. J.

The instrument here proposed for examination with the Röntgen rays I have not seen described elsewhere, and therefore present a brief account of it in the hope that it will be of use to investigators in this interesting subject.

A sheet of black paper, coated on one face with platinum-bari cyanide, is placed with the coated side inward across the end of a tube or box, into which the observer looks, and which is so fitted to the face or shielded by cloths that

the phosphorescent substance and the eyes are protected from all extraneous light. If this tube be then directed toward the excited Crookes' tube, which is giving the Röntgen rays, the phosphorescent paper in the tube glows, and the shadows of objects interposed between it and the Crookes' tube appear upon it. The advantage of this arrangement consists in its avoiding the experimental inconvenience of working in a dark room, and likewise the delays involved in the plan used by Röntgen. By this instrument the phenomena of the Röntgen rays can be most conveniently investigated. Its obvious applicability in diagnosis has led to my giving an account of it here. A more detailed account, with a report of cases in which it has been used, will appear in the March number of the *American Journal of the Medical Sciences.*

PRINCETON COLLEGE, Princeton, N. J., Feb. 7, 1896.

CORRESPONDENCE.

MONTREAL, Can., February 10.

[BY TELEGRAPH TO THE MEDICAL NEWS.]

I BEG to state that at the fortnightly meeting of the Medico-Chirurgical Society of Montreal, held on Friday night, February 7th, Prof. Cox of the science department of the McGill University, gave a demonstration of Professor Rontgen's cathode photographic methods, and exhibited photographs of a bullet in a man's leg. The patient had been shot in the leg some months ago, and in spite of every effort the surgeons were unable to locate the bullet. As the man was suffering a great deal, Prof. Cox undertook to discover it by cathode photography, and after developing the plate, the bullet was faintly seen between the tibia and fibula, from whence it will be an easy matter to remove it. Great interest was shown in the experiment, and nearly every member of our society was present as well as surgeons from Toronto and other cities who had been invited. The great value to surgery of this advance in science was fully recognized.

A. LAPTHORN SMITH, M.D.

ANTIVIVISECTION BILL IN CONGRESS—HEARING BEFORE THE COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

[SPECIAL CORRESPONDENCE TO THE MEDICAL NEWS.]

THE antivivisection scarecrow has suddenly come to life again at Washington, D. C., and the Humane Society of the District of Columbia has succeeded in having a bill introduced into both houses of Congress which calls for immediate attention from the scientific and medical professions in every quarter of this country. As it is very difficult to procure copies of this bill for distribution, owing to the limited edition printed under the present law, the entire text of the bill in question is given here for the benefit of those whose active interest it should command.

Fifty-fourth Congress, First Session: { *S. 1552.* / *H. R. 4446.*

IN THE SENATE OF THE UNITED STATES.

JANUARY 14, 1896.

Mr. McMillan introduced the following bill, which was read twice and referred to the Committee on the District of Columbia

A BILL

FOR THE FURTHER PREVENTION OF CRUELTY TO ANIMALS IN THE DISTRICT OF COLUMBIA.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person shall perform on a living animal any experiment calculated to give pain to such animal, except subject to the restrictions hereinafter prescribed. Any person performing, or taking part in performing, any experiment calculated to give pain, in contravention of this Act, shall be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars, or to imprisonment for a period not exceeding six months.

SEC. 2. That the following restrictions are imposed by this Act with respect to the performance on any living animal of an experiment calculated to give pain to such animal; that is to say:

(*a*) The experiment must be performed with a view to the advancement by new discovery of physiological knowledge, or of knowledge which will be useful for saving or prolonging life or alleviating suffering; and

(*b*) The experiment must be performed by a person holding such license from the Commissioners of the District of Columbia as is in this Act mentioned; and

(*c*) The animal must, during the whole of the experiment, be completely under the influence of ether or chloroform to prevent the animal feeling pain; and

(*d*) The animal must, if the pain is likely to continue after the effect of the anesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anesthetic which has been administered; and

(*e*) No experiment shall be made upon any living creature, calculated to give pain to such creature, in any of the public schools of the District of Columbia; provided as follows, that is to say:

First. Experiments may be performed under the foregoing provisions as to the use of anesthetics by a person giving illustrations of lectures in medical schools, hospitals, or colleges, or elsewhere, on such certificate being given as in this act hereafter mentioned, that the proposed experiments are absolutely necessary for the due instruction of the persons to whom such lectures are given, with a view to their acquiring physiological knowledge or knowledge which will be useful to them for saving or prolonging life or alleviating suffering;

Second. The substance known as urari or curare shall not, for the purposes of this Act, be deemed to be an anesthetic; and

Third. Notwithstanding anything in this Act contained, no experiment calculated to give pain shall be performed on a dog or cat, except upon such certificate being given as in this Act mentioned, stating, in addition to the statements hereinbefore required to be made in such certificate, that for reasons specified in the certificate the object of the experiment will be necessarily frustrated unless it is performed on an animal similar in constitution and habits to a cat or dog, and no other animal is available for such experiment; and an experiment calculated to give pain shall not be performed on any horse, ass, or mule, except on such certificate being given as in this Act mentioned, that the object of the experiment will be necessarily frustrated unless it is performed on a horse, ass, or mule, and that no other animal is available for such purpose; and

Fourth. Any exhibition to the general public, whether admission be on payment of money or gratuitous, of experiments on living animals, calculated to give pain, shall be illegal.

Any person performing or aiding in performing such experiment shall be deemed to be guilty of an offense against this Act, and shall, if it be the first offense, be liable to a penalty not exceeding one hundred and fifty dollars, and if it be the second or any subsequent offense, shall be liable, at the discretion of the court by which he is tried, to a penalty not exceeding three hundred dollars or to imprisonment not exceeding six months; and any person publishing any notice of any such intended exhibition by advertisement in a newspaper, placard, or otherwise, shall be liable to a penalty not exceeding ten dollars.

A person punished for an offense under this section shall not for the same offense be punishable under any other section of this Act.

Sec. 3. That the Commissioners of the District may insert, as a condition of granting any license, a provision in such license that the place in which any such experiment is to be performed by the licensee is to be registered in such manner as the said Commissioners may from time to time by any general or special order direct: *Provided*, That every place for the performance of experiments for the purpose of instruction shall be approved by the said Commissioners, and shall be registered in such manner as the said Commissioners may from time to time by any general or special order direct.

Sec. 4. That the Commissioners of the District, upon application as hereinafter prescribed, may license any person whom they may think qualified to hold a license to perform experiments under this Act. A license granted by them may be for such time as they may think fit, and may be revoked by them on their being satisfied that such license ought to be revoked. There may be annexed to such license any condition which the said Commissioners may think expedient for the purpose of better carrying into effect the objects of this Act, but not inconsistent with the provisions thereof.

Sec. 5. That the Commissioners of the District may direct any person performing experiments under this Act from time to time to make reports to them of the result of such experiments, in such form and with such details as the said Commissioners may require.

Sec. 6. That the Commissioners of the District shall cause all registered places to be from time to time visited by inspectors without previous notice, for the purpose of securing compliance with the provisions of this Act, and shall appoint and authorize an agent of the Washington Humane Society to make such inspection, and may also appoint such special inspectors as they may think fit, either permanently or temporarily, who may be willing to act as such inspectors gratuitously.

Sec. 7. That any application for a license under this Act, and for a certificate to be given as in this act mentioned, must be signed by three physicians duly licensed to practice and actually engaged in practicing medicine in the District of Columbia, and also by a professor of physiology, medicine, anatomy, medical jurisprudence, materia medica, or surgery in the medical department of any duly established and reliable school or college in the District of Columbia: *Provided*, That when any person applying for a certificate under this Act is himself one of the persons authorized to sign such a certificate, the signature of some other of such persons shall be substituted for the signature of the applicant.

A certificate under this section may be given for such time or for such series of experiments as the persons signing the certificate may think expedient.

A copy of any certificate under this section shall be forwarded by the applicant to the Commissioners of the District but shall not be available until one week after a copy has been so forwarded.

The Commissioners of the District may at any time disallow or suspend any certificate given under this section.

Sec. 8. That the powers conferred by this Act of granting a license or giving a certificate for the performance of an experiment on living animals may be exercised by an order in writing, under the hand of any judge of a court of record having criminal jurisdiction in the District, in a case where such judge is satisfied that it is essential for the purposes of justice in a criminal case to make such experiment.

This bill has been referred to the Senate and House Committees on the District of Columbia, composed of the following members:

SENATE COMMITTEE.

Hon. Jas. McMillan, Mich.	Hon. J. B. Wetmore, R. I.
" J. H. Gallinger, N. H.	" I. J. Harris, Tenn.
" H. C. Hansbrough, N. D.	" C. J. Faulkner, W. Va.
" Redfield Proctor, Vt.	" C. H. Gibson, Md.
" J. C. Pritchard, N. C.	" Jas. Smith, Jr., N. J.
" Lucien Baker, Kas.	" T. C. Martin, Va.

Hon. A. O. Bacon, Ga.

HOUSE COMMITTEE.

Hon. Joseph W. Babcock, Wis.	Hon. Alfred Milnes, Mich.
" Alfred C. Harner, Penn.	" G. L. Wellington, Md.
" Geo. M. Curtis, Iowa.	" J. D. Richardson, Tenn.
" Geo. W. Hulick, Ohio.	" H. W. Rusk, Md.
" R. C. Schannon, N. Y.	" James E. Cobb, Ala.
" J. H. Huling, W. Va.	" E. E. Meredith, Va.
" B. B. Odell, Jr., N. Y.	" Jo Abbot, Texas.

Hon. Seth W. Cobb, Mo.

In accordance with custom, both committees have referred the bill to the Commissioners of the District of Columbia for consideration, and at present it is in their hands.

The antivivisectionists, it is understood, applied for a private hearing before the commissioners, but the medical scientists of the district objected. Dr. Busey, as president of the District Medical Society, protested against any private hearings on the subject, and the Commissioners were thus led to appoint Thursday, January 30th, as the time for a general hearing.

The Humane Society was represented by its Antivivisection Committee, as follows: Mrs. C. Kennedy, Mrs. H. B. F. MacFarland, Mrs. H. V. Boynton, Mrs. W. Knowlton, Miss Peet, Gen. Rufus Saxton and Mr. MacFarland.[1] There were also present among the antivivisectors: Rev. Dr. Power, Mrs. E. Totten, Gen. H. V. Boynton, Mr. W. Knowlton, and ex-Commissioner Douglass; and Dr. Leffingwell, of Cambridge, Mass.

The medical profession was represented by Drs. Busey, Magruder, and Kleinschmidt of the Committee on Legislation, District Medical Society; Surgeon General Sternberg and Dr. Walter Reed, of the U. S. Army; Dr. J. J. Kinyoun, of the U. S. Marine Hospital Service; Dr. D. E. Salmon, chief of the U. S. Bureau of Animal Industry, with his assistant chief, Dr. Brumbaugh, his biochemist, Dr. de Schneinitz, his pathologist, Dr. Moore, his medical zoölogist, Dr. Stiles, and Dr. Schroeder, director of the experiment station; Health Officer Woodward, Dr. G. Wythe Cook, Dr. Sowers and others.

Mr. Kennedy opened the discussion by reading the bill, after which he stated that there is no law at present in the United States regulating or prohibiting vivisection except in Massachusetts, where a law exists controlling experiments upon animals in the public schools. He then read extracts from the Report of the English Commission on Vivisection of 1876, and spoke of the brutalities practiced by scientists.

Mr. Ross Perry, one of the ablest lawyers of Washington, then followed with a lengthy address, which was evidently intended to be in support of the bill. Some of Mr. Perry's remarks are worthy of a moment's attention, coming from such a well-known man, and being so radical and hysterical in their character. They were received by the agitators with delight, and will undoubtedly be used by them hereafter in their pamphlets.

He claimed in the most radical manner that the end attained did not justify the means used; that knowledge purchased at the price of sufferings of animals was purchased too high.

Dr. Busey was the first to speak against the bill. He remarked in a quiet, sarcastic manner, that he appeared before the Commissioners expecting to hear a discussion on the subject of vivisection, but as a matter of fact he had only heard long addresses in which the medical profession had been attacked as inhumane and brutal, and as liable to finally end by vivisecting idiots and criminals. He then directed attention to sections 2 and 6 of the bill which he claimed made the bill *prohibitory*, instead of regulating the practice.

At this junction the antivivisectionists showed that they intended to interrupt him as frequently as possibly and thus try to gain time and points. Mr. Kennedy was the first to institute these tactics, but Dr. Busey soon succeeded in bringing him to silence.

Dr. Busey brought forward an array of facts in favor of vivisection which was evidently a surprise to the opposite party, and which came directly home to the women present by referring to the practical application of transfusion of blood in its relation to flooding after delivery, etc.

Surgeon-General Sternberg was the next speaker for the scientists, but, by request, he ceded the floor to Dr. Leffingwell, of Cambridge, Mass, whose time in Washington was limited. The antivivisectionists evidently were disappointed by the remarks of the Doctor, for he practically killed the bill for them, so far as the Commissioners are concerned. He admitted Dr. Busey's statements regarding the value of vivisection in science, and stated that if it were a question between vivisection and antivivisection, he would stand by vivisection. He desired to see vivisection restricted, but admitted that the bill under discussion was not satisfactory to this end.

Commissioner Truesdell then suggested that Dr. Leffingwell submit in writing for consideration of the Commissioners any suggestions he had to make, and the floor was given to General Sternberg.

As soon as General Sternberg began to speak, the antivivisectionists resumed their tactics of interruption, one after another propounding questions or making statements calculated to lead the speaker away from his train of thought.

The discussion here became stormy in the extreme, and the constant interruptions so exasperating that Dr. Salmon protested against their continuance. After this, Dr. Sternberg was able to finish his remarks in comparative quiet.

About three hours had been occupied by the hearing, and when time for adjournment had arrived, only two of the opponents had had an opportunity to speak. The bill is still in the hands of the Commissioners, who will refer it back to the Congressional Committees for report to Congress.

Several important matters come up in connection with this bill in Congress: *First.*—Is not this the beginning of a concerted action on the part of the antivivisectionists in various parts of the country? The importation of Dr. Leffingwell from Cambridge gives some plausibility to this view. *Second.*—If such is really the case, is it not time for the scientific and medical men of the country to be on their guard in the various States, to see that no State legislature passes any bill which will seriously compromise scientific research? But if there is no organized movement of this nature, this bill, even if reported to the two houses, may be followed by serious results, for fanatics will be encouraged by the apparent "importance" of their movement, and we may look for the introduction of extreme measures in many of the State legislatures.

[1] Names are taken from the *Washington Times*, January 31st.

OBITUARY.

Dr. James Edmund Reeves died at Chattanooga, Tenn., on January 4th, in his 67th year. He had been ill for a relatively short time with some obscure affection of the liver. Dr. Reeves was born in Annisville, Va., and after an apprenticeship in the office of his preceptors, he began at the age of 21 the practice of medicine in Sutton, W. Va. A year later he took a course of lectures at Hampden Sydney Medical College, of Richmond. Nearly ten years later he took a second course of lectures in the Medical Department of the University of Pennsylvania.

While a resident of Wheeling, W. Va., he agitated the subject of municipal hygiene and secured the passage of an ordinance establishing a city health department. In 1869 he was elected city health officer and county physician, and continued in office for four years. Subsequently he served as a member of City Council for four years. He was the author of a law creating the State Board of Health of West Virginia, of which he was a member, and for five years the secretary. For about the last six years he lived at Chattanooga.

Dr. Reeves was one of the founders of the American Public Health Association, and its president in 1885. In 1867 he issued a call for the organization of the State Medical Society of West Virginia, whose first secretary he was, and in 1881 its president. He was a member of the Executive Committee for West Virginia, of the International Medical Congress, held at Philadelphia in 1876. In 1882 he was elected a member of the Judicial Council, and in 1895 a trustee of the American Medical Association, and a member of the Association of American Physicians. He was one of the vice-presidents of the section of Public and International Hygiene of the International Medical Congress, held at Washington in 1887; vice-president of the American Microscopical Society in 1886; a member of the Advisory Council of the Pan-American Medical Congress, held at Washington in 1893. He was employed by the State Board of Health of Tennessee to make sanitary inspections of the State's defences against yellow fever during the Jacksonville epidemic of 1888.

In addition to numerous journal articles Dr. Reeves was the author of "A Practical Treatise on Enteric Fever," and a "Manual of Medical Microscopy for Students, Physicians and Surgeons."

The last signal service rendered the medical profession by Dr. Reeves was his brave and successful fight against quackery in the special form of a "consumption-cure." As is well known to the readers of the News, Dr. Reeves was sued for libel, but the jury, before which the case was tried, brought in a verdict in his favor ten minutes after the evidence had all been in, the closing speeches made, and the judge's instructions given. To the credit of the profession, the expenses of this suit, on the part of Dr. Reeves, were made good by voluntary contributions by a considerable number of physicians.

Dr. Reeves was the type of man that the profession can ill afford to lose—broad-minded, progressive and aggressive, rigidly honest and ethical. The profession of medicine is nobler that he has lived.

REVIEWS.

Catarrhal Diseases of the Respiratory Passages. Carter. Pp. 135. Chicago: E. H. Colegrove & Co., 1895.

It is difficult to properly characterize the series of fourteen papers contained in the book, or to determine the purpose of their publication. At any rate, undue prominence has been accorded lake winds and ozone in the etiology of tonsillitis. The author thinks that in cases of "catarrhal sore throat" the inhalation of menthol produces better results in damp than in dry weather. The chapter on the distribution of croup, bronchitis, etc., contains many interesting facts, and is responsible for the presence of Burmah, Dutch Guiana, and Zululand in the very complete index. Venezuela has for some cause been omitted. The extensive bibliography at the end of the book is doubtless valuable, but has its defects. Parkes' *Hygiene* and the Medical News are both mentioned, but are not visibly connected with any statement made by the author.

Die Lehre von den Naseneiterungen. Grunwald. Zweite ganzlich umgearbeitete Auflage. S. IX. u. 283. München: J. F. Lehmann, 1896.

When Grunwald published in 1892 the first edition of his monograph upon the pus-producing affections of the nose and accessory sinuses, it was generally conceded to be the most important contribution to rhinology of the year. There was so much that was valuable and stimulating, and so many subjects looked at in a new light, that some of us wondered whether all that the author said could be true. Grunwald's originality of treatment is perhaps best displayed in his discussion of "Ozena." His clear-cut convictions are not very moderately expressed, notwithstanding the fact that they contradict generally accepted theories. A second notable section of the work is that devoted to empyema of the sphenoidal sinuses, of which thirty-seven chronic cases are reported by the author. Although there is a markedly polemical complexion to many portions of the book, it is in an even greater measure rich in instructive clinical data, and while we cannot subscribe to everything contained in the work, we shall, at any rate, be constrained to perfect ourselves in the diagnosis and treatment of the somewhat obscure and elusive affections therein discussed.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 14, 1896, to February 3, 1896.

1st Lieutenant James M. Kennedy, Assistant Surgeon, is relieved from duty at Camp Merritt, Montana, to take effect upon the expiration of his present leave of absence, and ordered to Fort Missoula, Mon., for duty.

The leave of absence granted Captain James D. Glennan, Assistant Surgeon, is extended one month.

Leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension, is granted Captain Benjamin Munday, Assistant Surgeon.

First Lieutenant Willian H. Wilson, Assistant Surgeon, is relieved from duty at Fort Leavenworth, Kansas, and ordered to Fort Bayard, New Mexico, for duty at that post.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

CLIMATIC CONDITIONS IN THE ROCKY MOUNTAINS FOR THE TREATMENT OF PHTHISIS AND ALLIED AFFECTIONS.

BY ALFRED MANN, M.D.,
OF DENVER, COLORADO.

BROADLY speaking, the whole Rocky-Mountain region offers exceptional advantages in climatic conditions for the treatment of phthisis and allied affections, yet, on comparing different localities in this vast region, it readily appears that they are not all suitable as places of residence for invalids, and that a careful examination is necessary of the elements which together make up the character of any given place before we can safely recommend its sanitary qualifications.

It is not wise without further examination to accept as good evidence the statements of persons interested in real estate and commercial speculations, for these are often notoriously unreliable. Wherever a town or region is being "boomed," there is sure to be loud advertisement of all the various advantages possessed, and of many that are not possessed by the spot in question. The real-estate speculators and settlers discovered early in the history of the settlement of the West that a constant influx of seekers after health, adds materially to the prosperity of the community which they favor with their presence. Hence the chambers of commerce and other public, as well as private, organizations find it remunerative to advertise their locality as "the world's sanitarium," the "Mecca of invalids," etc. Frequently considerable sums of money are spent in such ways that might much better be applied in improving local defective sanitary arrangements.

One of the best advertised towns in the Southwest in this respect is Phœnix, Ariz., and now that another boom has begun in this miscalled health resort, it is time to call the attention of physicians in the East to the difference that exists between a region useful for agricultural and land speculation purposes and one which can properly be recommended for the climatic treatment of throat and lung troubles. The writer having spent four months in winter at Phœnix, and several winters and springs in other parts of the Southwest, considers it his duty to strike a note of warning for the benefit of those who are not so well acquainted with the conditions in that part of the world.

Every one who has had the opportunity of observing a number of phthisical patients for a time after their arrival in Colorado from the East, and has noted the rapidity with which, in a large proportion of the cases, their whole aspect improves, cannot help concluding that there is a tonic effect due to this climate which is far more powerful than that of drugs. This rapid improvement is most noticeable in incipient cases, and, generally, in those in which destruction of lung tissue has not far progressed. But even in cases well advanced in phthisis, an invigorating climate, if not too cold or at too great an altitude, is a material aid to the comfort of invalids. If patients must be sent to Arizona for the winter, why select the most enervating region to place them in, when much better spots are near at hand? Because Phœnix and the Salt-River Valley are productive of fruit and alfalfa, they are not necessarily suited to the purposes of the health-seeker.

The uncritical lay mind argues that, because a certain proportion of cases improve in Phœnix, that town is a good place for consumptives. Every physician knows that not a few cases of tuberculosis of the lungs get well even in New York city, but no one is tempted on that account to send consumptives there for the cure of this malady.

Phœnix lies in the Salt-River Valley, in the southern middle portion of Arizona. The valley has an extent of about sixty miles in length by twenty in breadth. At a short distance below the surface of the soil, at a depth varying, in the neighborhood of the city, from ten to forty feet, there is a permanent lake, one might say, of brackish water. The waterworks of Phœnix are supplied with this water pumped from a well fourteen feet deep, and situated within the outskirts of the city. As the rainfall in Arizona is very scanty, agriculture is carried on by the help of irrigation on a large scale, practically all the water of the Salt River being used for this purpose. The result is that the humidity of the air is comparatively high; in

summer there are regularly heavy dews, and in winter hoar-frosts are far from uncommon.

The town itself, in winter and spring, the only seasons when one would think of sending invalids there, is unhealthful, there being a great deal of sickness, not only among the visitors, but as well among the resident population. This is not to be wondered at when one observes the sanitary arrangements of the place. On both sides of each street run irrigating ditches. These carry running water for several days, and then are empty, with the exception of stagnant pools remaining here and there along their courses, for a period of three or four days more, while the hot Southern sun dries into dust the often noisome filth which covers the bottom. When I visited Phœnix three years ago it was the custom to clean the down-town ditches from time to time, and throw this nasty, ill-smelling black filth into the middle of the street, where the sun rapidly dried it, and the passing wagons ground it into dust and spread it in the air.

There are few cases of tuberculosis benefited in this climate, according to my observations on the spot, in comparison with the number who do well at points farther east in Arizona, in New Mexico, and in Colorado. The climate of Phœnix is depressing, not invigorating. The food and accommodations are very little, if any, better than can be procured in any large town in New Mexico, and are not what they should be for the majority of those who are obliged to seek a warm climate on account of lung trouble.

Phœnix is situated at an altitude of eleven hundred feet only, not enough to satisfy the indication where altitude is desirable in the treatment of tuberculosis. If dryness of atmosphere is desired, it is again far behind many other towns in Arizona and New Mexico.

Unless the streets are continually kept heavily sprinkled the dust is almost unbearable, the soil being chiefly the well-known adobe, which, when dry, forms the finest powder, and is whirled into the air in clouds by every passing vehicle.

The sanitary conditions are better on ranches outside the town, the other factors of the climate remaining the same.

Only in cases with a very weak heart does there seem to be a good reason for preferring the Salt-River Valley to the more bracing climates in the higher districts farther east, and here I am inclined to think that the low desert in the western part of the territory and in southeastern California offers a better, because dryer, climate.

Tucson, Ariz., is about 120 miles Southeast of Phœnix, on the Southern Pacific Railroad. It is more easily reached, and has a far better climate, than the latter town. It is, by comparison, bracing and far more suitable to the majority of cases of phthisis. It has an excellent climate in winter and spring, and is one of the best of the Southern resorts in this respect, though there is some dust, as there is almost everywhere in the Southwest. Unfortunately there is as yet no first-class hotel in Tucson, but fair accommodations can be found. Keeping house is perhaps the most satisfactory way of living. The altitude of Tucson is 2,400 feet.

Forty miles north of Tucson, in the foothills of the Catalina Mountains, is the little hamlet of Oracle. This offers an almost ideal climate eight months in the year for those cases that are too weak to profit by the more stimulating climate of Colorado. It is reached by stage from Tucson in five to six hours, and has several substantial advantages over the towns which, like Phœnix, are situated in the midst of a level agricultural district. Nestling among the hills, high above the valley of the San Pedro River, it is surrounded by unusually attractive scenery, which gives all its walks and drives a perennial charm.

Oracle has no dust, it is even out of range of the dust storms which periodically sweep the whole Southwest. Its altitude is 4,500 feet.

There are several other towns in Arizona and New Mexico which offer a haven for invalids during the bad months. Arizona is sheltered by mountain ranges from the cold northern winds and storms, and is consequently a few degrees warmer than the valley of the Rio Grande in New Mexico. In each territory there are over 320 sunny days in the year, and invalids can spend nearly every day out of doors.

El Paso, Tex.; Las Cruces, Las Vegas, and Las Vegas Hot Springs, of New Mexico, which are close neighbors, have a very good climate, and are annually visited by numbers of health-seekers. Albuquerque and Santa Fé also have their share of visitors.

The elements which together make up the best climate for tuberculous patients are a pure, dry atmosphere, plenty of sunshine, a temperature low enough to be invigorating, and freedom from storms, especially cold wet ones. The effect of altitude seems to be that of stimulating the system, and in cases that have considerable power of reaction the value of this factor may be very great.

All these climatic conditions may be found

combined in varying degrees in the larger part of the area included in Colorado, New Mexico, and Arizona. Everywhere within these limits the number of days on which these invalids need to remain indoors on account of bad weather is very small, as may be inferred from the small amount of rain. The average annual precipitation in Denver for the years 1891, '92, and '93, as given in the reports of the Weather Bureau was 14.97 inches, while for the same years that of New York was 44.45 inches, almost three times as much. In New Mexico and Arizona there is even less rain than in Colorado.

The temperature is never too low to permit an out-of-door life, even in Colorado. The air is dry, except in a few comparatively small areas where irrigation is carried on largely, and its clearness and purity are a perpetual delight to visitors from the east. As we go farther north, the ease with which good accommodations and food are procured steadily increases, and the climate becomes cooler and more bracing.

In conclusion, I wish to offer a few suggestions in regard to a proper selection of climate to suit the various types of cases. Incipient, uncomplicated cases, as a rule, do best in a dry, tonic climate of fairly high altitude. Weak heart, when not due to organic lesion, unless very pronounced, is not a contra-indication for an altitude of 5000 to 6000 feet. On the contrary, as the general health improves, the heart usually grows stronger and the pulse becomes slower.

For cases somewhat further advanced, with breaking down of lung tissue, but otherwise in fair condition, the same climate is useful: that is, high altitude and a cool, dry station. Such a climate is furnished by Colorado. One weighty reason for the selection of Colorado as the residing-place of invalids is the ease with which, in its numerous progressive towns and well-settled rural districts, suitable food and accommodations can be procured. As Dr. Osler says, "In this disease the *prime viæ* control the position," and it is very important that the appetite and digestion should not be interfered with by coarse and unappetizing food. In this respect there is still much left to be desired in most of the resorts of New Mexico and Arizona.

In the case of those far advanced in the course of the disease, with large cavities, etc., it is often advisable, even if not absolutely necessary, that at least the coldest months of the year, say from the middle of December to the middle of May, be spent in a warmer climate free from very cold weather. This can be found in New Mexico, Arizona, and old Mexico. I do not here mention California, for my belief is that the popular and populous parts of Southern California are inferior in value for the purpose under consideration to the dry regions mentioned above.

Cases with organic heart lesion or other serious complication, and those which seem to offer slight resistance to the progress of the disease, are usually better off at low altitudes, and these often bear a fairly warm summer climate quite well. Cases far advanced, with well-marked cavities, high fever, and great general debility, should not, as a rule, be sent from home.

Sometimes it is advisable for a patient to spend the hottest part of the summer in some of the lovely, cool mountain parts of Colorado: the autumn in the altitude of Colorado Springs or Denver, and the winter and early spring in a more southern latitude.

ANTIPHTHISIN.[1]

BY LLEWELLYN P. BARBOUR, M.D.,
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PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS AND LECTURER ON DISEASES OF THE CHEST, MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE SOUTH.

ANTIPHTHISIN is one of the remedies recently introduced for the treatment of tuberculosis. It is the result of efforts to discover a substance that will destroy the germ and directly affect the specific tubercular process.

And this is the claim that its originator makes for it: that it "causes the destruction and disappearance of the tubercle bacillus in living tissue, and the return of the proliferated and degenerated cells to their normal appearance." Notice that the claim for the destruction of the bacilli is in "living tissue" only. A moment's consideration will convince us that this is the limit of any germicide acting upon and through the blood. Bacteria developing in necrotic tissue and caseous masses are not reached by the blood, yet caseous and necrotic areas abound in advanced phthisis. Further, most cases of advanced phthisis have a mixed infection. It is not claimed that antiphthisin will destroy pyogenic germs or directly affect septic processes. Nor can it restore to normal the various degenerations of other organs that are apt to occur in the course of chronic phthisis.

In passing judgment upon any proposed remedy for this disease, we must ever keep in mind these

[1]Read before the Middle Tennessee Medical Association, November 21, 1895.

very varied and serious pathological conditions, and not expect to accomplish impossibilities.

But if antiphthisin will do all that is claimed for it, that is, destroy the tubercle bacilli in living tissue, it will do all we can reasonably expect of any remedy, so far as the purely tubercular process is concerned. If it will do this, we may expect definite and decisive results in tuberculosis of an early stage, and the effect will be more prompt the more vascular the tuberculous area. Even in more advanced phthisis, it is fair, I think, to expect benefit from such a remedy provided the patient has a good degree of general health, with not too extensive areas of caseation and necrosis. In such conditions, we can logically hope to restore the still living tuberculous tissue to health, and thus limit the destructive process; and by continuing the treatment a sufficient length of time, prevent further infection while the caseous mass is being absorbed or otherwise disposed of, and thus eventually bring about a cure.

Now, is antiphthisin such a remedy? Does it actually cause the destruction of bacilli in living tissue and show corresponding results in the treatment of tuberculosis? It is as a contribution to the study of the subject and to help answer this question that I report the following cases.

Before beginning this report, let me say that my patients receive my constant, careful supervision in every detail of their daily lives. I endeavor to guard them against everything that may lower their vitality, and to leave nothing undone in the way of hygienic, dietetic, or therapeutic management that makes for improvement. And while my patients have generally not been able financially to live under ideal conditions, I have endeavored to approach the ideal as nearly as possible in each case.

I was first induced to use antiphthisin by my observations of its effects while I was temporary assistant at the Winyah Sanitarium, Asheville, North Carolina. During the previous year I had been there as a patient, and had excellent opportunity to study the use of tuberculin, and had become painfully aware of its limited field of usefulness, because of its toxic properties. When I returned to assist Dr. Von Ruck during the absence of his house physician, I found that he had very generally superseded the use of tuberculin by that of antiphthisin. And while I still felt, as I had previously written, that good results could be obtained by the careful use of tuberculin in selected cases, yet I was favorably impressed with the antiphthisin as compared with the tuberculin, first, because of its more rapid effect, and second, because of its much wider field of application. Debility and temperature were no bar to its use. During my stay I gave it hundreds of times to patients in all sorts of phthisical conditions, yet I never saw any but very slight toxic effects, though we gave a few doses as large as 8 c.c.

The first case in which I used it in my own work was Mr. K., aged 26, native of Wisconsin. He had had a hemorrhage several months previously, since which time he had been coughing considerably. Sputum about an ounce in twenty-four hours, with few bacilli. Temperature slightly above normal—99½. Pulse and respiration normal. Some tubercular infiltration through entire upper lobe of right lung, indicated by dullness and broncho-vesicular murmurs. Just below the middle of the clavicle on right side there was a little crepitation and a few moist râles. A little lower there was a weak pleuritic friction sound. There was a weakened respiratory murmur in the left apex, but no further evidence of disease.

He received his first dose of antiphthisin December 23, 1894, and continued it one month.

With him, as with all others, I began with $\frac{1}{20}$ c.c. The second day I gave $\frac{1}{10}$ c.c., and increased by $\frac{1}{10}$ c.c. each day to ½ c.c. I kept him on that amount six days, then increased to 1 c.c., and remained on that a few days, and then again increased to 1½ c.c., the amount he was taking at the end of four weeks, when he stopped treatment. At the end of this time he had gained three pounds in weight, and the cough and expectoration had entirely ceased. The adventitious sounds had disappeared, the respiratory murmur had softened, and so far as could be learned by physical examination, the lungs were in a normal condition. His temperature was normal, and he expressed himself as feeling perfectly well. This man passed out from under my observation, and I cannot report his present condition.

Case II.—Female, single, aged 21. She began to lose strength and weight in December, 1894. In January, 1895, she began to cough. The cough was of a hacking quality, with only a little expectoration. Bacilli averaged two to a field. May 3d, she had lost ten pounds in weight, appetite poor, sleep restless. Considerable infiltration was apparent in upper lobe of right lung, extending to lower edge of lobe anteriorly; only in apex posteriorly. In the subclavicular region there were a few râles. At one spot near junction of mammary line with lower border of second rib, there was slight crepitation. On the left side there was a deep-seated spot in the upper part of mammary region of nearly or quite complete consolidation. Just what condition this spot was in, it is, of course, impossible to determine positively, but I concluded it was fibroid tissue, with probably some centres of caseous degeneration.

May 4th, I began the use of antiphthisin, beginning with $\frac{1}{10}$ c.c., gradually increasing, as in all other cases. June 12th, she received 3 c.c., which was repeated on the 13th, 14th, and 15th. At this time, the cough had entirely ceased, the temperature was normal, and the appetite better, though there had been no increase of weight. Dulness less marked, respiratory murmur softened, except at the one place in the upper left mammary region. Râles and crepitation had entirely disappeared. While there was no cough, I found that she did raise a little sputum during a throat-clearing process upon rising in the morning. A microscopic examination showed no bacilli, however. After this I was never able to get sputum to examine from this patient.

Because of the expensiveness of antiphthisin, I now placed this patient on a solution of yeast nuclein, giving it by hypodermic injection, according to directions of Dr. Vaughn, of Ann Arbor. June 17th, she received the first dose of nuclein —8 minims—which was gradually increased to 60 minims on July 6th. While receiving the nuclein, she not only did not improve, but the physical signs grew slightly worse, and the cough reappeared.

July 7th, I resumed the antiphthisin, and between that date and August 8th she received 50 c.c. of the remedy. Under it the cough again rapidly disappeared and other signs improved, so that by August 5th, the date of my last examination, there was no evidence of anything abnormal, except in the one area in the upper part of the left mammary region. The right upper lobe, which gave the most marked evidence of active disease at the first examination, was now apparently restored to a normal condition, but the small spot in the upper mammary region of the left side had improved very little, if any, under treatment.

My explanation is this: On the right side, the tubercular infiltration was recent and the circulation good. The stubborn area on the left side was older, and very probably the seat of primary infection. It had undergone fibroid change, with some centres of caseous degeneration. If I am right, this spot continues as a centre for further infection and a source of danger, and she will ultimately have a relapse, unless the treatment is renewed and continued for a considerable length of time. Up to date, she is reported as holding her own and in fair general health.

CASE III.—Female, single, aged 19. Family history of tuberculosis on the mother's side. A maternal aunt, only a little older than the patient, had died from consumption the previous year. The patient had been very intimate with this aunt, and was with her a great deal during her sickness. Patient had a protracted hacking cough, first in the Fall of 1893. This lasted three or four months and then ceased, only to reappear again in a few weeks. It continued to come and go until October, 1894, since which time there had been no cessation. My first examination of her chest was made in February, 1895. From the physical signs alone, I made a diagnosis of phthisis. The mother, however, refused to believe that her girl had consumption. Some wiseacre of a doctor had told her that the cough was from the liver. Nevertheless, she continued to lose flesh, and the cough increased in severity. In May she began to have some fever each day, and had several slight hemorrhages. An examination revealed a moderate number of bacilli in the sputum.

May 28th, I began giving the patient hypodermic injections of nuclein solution, and continued the treatment three weeks. There was no improvement whatever under the nuclein, and I now persuaded the parents to use the antiphthisin. She was now coughing harder than ever, appetite poor, sleep broken and restless, feverishness and chilly sensations frequent, temperature running to 100 and 100½ each day.

The physical signs were those of almost complete consolidation in right subclavicular region,[1] with considerable deposit throughout upper and middle lobes. On the left side there was only slight trouble in the apex. Bronchial râles and pleuritic friction sounds in right subclavicular region. Between June 24th and August 10th, this patient received 67 c.c. of antiphthisin.

Within two weeks after beginning it, she began to show improvement. By August 10th, expectoration had ceased entirely and the cough almost entirely. She gained eight pounds in weight, with corresponding gain in strength and general appearance. There was marked improvement of all physical signs. In the right subclavicular region there was still some dulness, and the respiratory murmur broncho-vesicular in quality, but much less marked than a month previously, while in the other regions these signs had disappeared. August 12th, this patient married, and has never returned for treatment. She is holding her own still as to weight and general appearance, but has a slight cough. She is not cured, and ought to have continued the treatment a month or two longer.

CASE IV.—Male, aged 32. This patient nursed a brother for several months who had consumption and died in March, 1894. In February, 1895, patient had an attack of "grip," from which he never fully recovered. Since that time, had slowly lost in weight and strength.

June 25th, when he began treatment, patient showed decided tubercular infiltration of left upper lobe. There was a small cavity at the left apex, surrounded with crepitant and other moist râles; broncho-vesicular murmur throughout, extending to lower border of second rib. On right side there were no râles, but there was a loud, harsh, bronchial quality in the murmur with a dull percussion note. Not much cough. Expectoration

[1] A visiting physician, a skilled diagnostician, who saw this patient about the time I began to use the antiphthisin, said that he did not believe it possible to prevent the formation of cavity.

muco-purulent, but scant. Bacilli plentiful. Appetite poor, complexion sallow, sleep restless.

His improvement under antiphthisin was never so rapid as that of case III, but was steady and continuous. By the middle of August his appetite was much better, he was decidedly stronger and he slept better. September 27th, I examined his chest the last time. The râles and crepitation had entirely disappeared. The murmur softened to nearly the normal, except just around the cavity, where there is a fibroid condition. On the right side the physical signs were those of a normal chest, except just above and below the clavicle, where there is a slight dulness and a harsh murmur.

This patient received altogether 150 c. c. of antiphthisin. When he began treatment his temperature was running occasionally to 99½, and sometimes to 100. During the last month of treatment it never went above normal. The bacilli disappeared from the sputum before the end of the second month of treatment and the sputum itself disappeared soon after. He is now attending to business apparently in perfect health.

Case V, male, aged 25. This patient was in an advanced stage when he came under my care, October 5, 1895. There is a large cavity in the apex of right lung, active destructive changes going on in the middle lobe and tubercular infiltration throughout entire lung. On the left side there is considerable deposit in the upper lobe, but slight destructive changes. During the first two weeks of October, he had a high septic fever, his temperature running to 105 and 106 every day. Profuse night sweats followed this high temperature. Although a very unfavorable case, at his request I began the use of antiphthisin on October 11th.

The bacilli are now fewer, take the stain less readily, and show degenerative forms. He is expectorating less freely. There are less râles, and in some places the murmur is clearing. His temperature is now much less, rarely ever going over 101 during the past three weeks. There are no night sweats. While the outlook in his case is not bright, the results have been sufficiently encouraging to lead me to continue the remedy. He is now taking 3 c. c. each day, and has received 47 c. c. altogether. I do not suppose that the antiphthisin is controlling the septic fever directly, but I am sure it is limiting and lessening the tubercular process.

It will be noticed that my patients were all under treatment only a comparatively short time. Cases II and III stopped treatment against my judgment because they felt so well as to think they did not need it longer. Case I was under treatment only a month, yet at the end of this time was apparently a well man. Case II was under treatment three months, inclusive of the time she received nuclein. She improved under antiphthisin, lost ground slightly while taking nuclein, and again improved under antiphthisin. Case III showed no improvement from sixteen days' treatment with nuclein, but gained very rapidly during the fifty days she received antiphthisin, and at the end of that time could not be convinced that she was not perfectly well. Case IV was under treatment a little more than three months. He gained very slowly at first, but steadily, and has continued the gain since.

In each of these cases there has been improvement of the lung condition where improvement could be expected; decided lessening, and in two cases entire cessation of cough. In every case except the last, the bacilli have disappeared from the sputum, and finally expectoration has ceased, while the last case already shows fewer bacilli and lessened sputum. These results are certainly favorable to antiphthisin, and if other competent observers agree with me we must conclude that antiphthisin does actually destroy bacilli in living tubercular tissue, and accord it a high place in the therapeutics of phthisis.

The antiphthisin which I have used has been obtained directly from the laboratory of the Winyah Sanitarium, at Asheville, N. C. For the information of those who would like to know more of the preparation of antiphthisin, I add the following abstract furnished me by Dr. Karl Von Ruck:

"For the production of this curative substance the tubercle bacilli are grown in the ordinary way upon liquid culture media, and when fully developed and matured, the entire culture is treated with kresol, or other germicidal substance, without the application of heat, in order to kill the tubercle bacilli (temperatures sufficient to kill the tubercle bacilli, injure and unfavorably modify the curative substance contained in the culture fluid). After the addition of kresol to the entire culture, the latter is thoroughly shaken, and allowed to stand for twenty-four or more hours.

"Next, the tubercle bacilli are separated from the fluid by filtration. The liquid filtration is now mixed with a solution of sodic iodide of bismuth, or with any other double salt of iodide and bismuth in strong acetic acid, which causes the formation of a precipitate. The sodic iodide of bismuth solution is added so long and in such quantity until no further precipitation occurs from the aforesaid liquid filtrate.

"The liquid filtrate is next made weakly alkaline by addition of a solution of ammonium carbonate or other alkali for the precipitation of the

bismuth salts, under application of gentle heat upon a water-bath with a temperature not to exceed 70° C., and again filtered. The liquid filtrate is next concentrated in vacuum at a temperature not to exceed 70° C., and after concentration is treated with alcohol, under the addition of which a fine grayish-yellow flocculent precipitate is formed, which slowly settles down and adheres to the sides and bottom of the vessel. This is finally collected after repeated washings with alcohol, pouring off the liquid and evaporating any remaining liquid and alcohol at temperatures below 70° C. This last precipitate, obtained by the addition of alcohol, is the curative substance : it is freed by the above process from toxalbumins and other poisonous substances.

"For therapeutic purposes this precipitate is dissolved in distilled water, to which $\frac{1}{5}$ per cent. orthokresol is added for its preservation, forming a clear, yellowish or straw-colored liquid, and it is then administered either by local application or by subcutaneous or rectal injections."

COCAINE-POISONING. WITH REPORT OF A CASE.

BY CHARLES WILSON INGRAHAM, M.D.,
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DOUBTLESS, at the present time the most frequent source of acute drug-poisoning occurring in the regular practice of medicine and surgery is that following the use of cocaine in legitimate doses or applications. This is due to the increasing, promiscuous use of this drug among the laity for the relief of various affections. Not only is acute cocaine-poisoning of comparatively frequent occurrence, but more danger attaches to poisoning from it than from nearly any other non-corrosive substance.

Though ordinarily possessed of no immediate danger to life, chronic cocaine-poisoning is one of the most unfortunate and pitiable conditions to which human beings are liable. The continuous use of cocaine can scarcely be termed a habit, but rather a moral depravity. In justice to such victims, and in view of our present knowledge of the physiological and later the pathological changes occurring in the body as a result of its habitual use, it is only correct to term such condition *chronic cocaine-poisoning*. The drug produces quite well defined changes in the nervous system, and later in the muscular system. Of recent years many persons have become cocaine *habltués*, or dangerously near that state, from the continued use of some of the so-called "patent catarrh cures." The stealthy, insidious undermining of the nervous system from the regular use of such preparations progresses, until, when the cause is discovered, it is often too late to mend of one's own free will.

A large majority of cases of acute cocaine-poisoning occurring in regular medical practice are due to a peculiar constitutional condition of certain individuals. This condition is generally known as idiosyncrasy. Just what idiosyncrasy is, no one seems to have satisfactorily explained. It is a condition which seems to obtain more frequently and in more alarming proportions from the use of cocaine than from any other drug in common use.

The well-known fact that those who are susceptible to the effects of cocaine are not similarly affected from the administration of other drugs would seem to indicate that cocaine-idiosyncrasy was due to some peculiar *diseased* condition of the individual thus affected. In the healthy individual it is the belief of the author that the use of cocaine in minimum doses or applications, from the hands of regular physicians, is wholly devoid of danger ; that when dangerous symptoms from such doses occur, it is an indication that the health of the subject is considerably below the normal standard.

Cocaine is a comparatively recent drug, and physicians, chemists, and microscopists have not solved many important questions relative to its safe administration. The frequently asserted remark that the action of cocaine is not reliable, that it is unsafe and uncertain, is not, strictly speaking, true. It is the individual to whom it is administered who is unsafe and uncertain. He may have a cardiac, kidney, or nervous affection, either organic or functional, which renders the administration of cocaine in his case, even in minute doses, unsafe. When such conditions are known, or even suspected, cocaine, if given at all, must be administered with great precaution.

It is very possible that suppurative diseases may cause systemic poisoning from absorption of toxins, and so degenerate the heart and kidneys by destructive actio nupon the blood-corpuscles as to render the use of cocaine unsafe. In performing minor surgical operations upon parts of the body where means cannot be employed to prevent its systemic absorption—if the affection is of a suppurative nature and of long standing—it is very doubtful if cocaine anesthesia is justifiable, unless full precautions are taken to prevent or counteract any possible untoward effects.

Cocaine administration in medical practice

could be rendered absolutely safe by refusing its use in persons with kidney and heart affections, and the employment of means which will fortify against the possible occurrence of accidents. How can we fortify against such accidents? First: By the administration of drugs that are known to possess physiological antagonism—morphine and atropine. The physician should administer by hypodermic injection a small dose of a combination of morphine and atropine a few minutes before making use of cocaine. Second: The administration of ten gallons of oxygen gas immediately before making use of cocaine, and having an abundant supply of oxygen gas at hand in case of emergency. It is the author's belief that in oxygen gas we have the only true antidote to cocaine-poisoning.

My interest was first aroused as to the probable benefit to be derived from oxygen gas in the treatment of acute cocaine-poisoning on learning of its marked control over opium and morphine poisoning; and the report of the following case will, I believe, fully sustain the reliability of oxygen gas as an antidote for cocaine-poisoning:

Mr. A., while suffering from a severe attack of toothache, applied to the gums a ten per cent. solution of cocaine by means of pledgets of absorbent cotton. As this process was repeated quite frequently during a whole day and until late in the evening, it is probable that not less than ten grains of the drug reached the system from venous absorption. He, however, noted no unpleasant effects, and retired as usual about 10.30 P.M., but could not get to sleep. About one hour later he noted that the heart action was very rapid and forcible. As the condition seemed to increase in severity, he finally aroused his wife, who at once prepared some brandy, to which was added a few drops of digitalis. This failed to give the slightest relief. At midnight the pulse was 140. It had lost its forcible character, and was soft—almost imperceptible. At 12.30 A.M. patient became unconscious and very delirious. Physicians were immediately summoned, who worked over him faithfully throughout the remainder of the night. Alcoholic stimulants, morphine, and atropine were administered hypodermically. Despite the most skilful efforts the patient continued to weaken, and the comatose condition became more and more extreme. Breathing shallow. Lips blue. Extremities cold. Pulse scarcely perceptible. During the forenoon several additional physicians were called in. The hypodermic treatment was kept up but there was not the slightest reaction, and there seemed no chance whatever of the patient's recovery. At 2 P.M. it was the unanimous opinion of the physicians that he could not survive more than two hours. The lungs were fast becoming congested, and dark clots of blood were occasionally raised. At 3 P.M. the use of oxygen gas was suggested, and a large supply was immediately obtained. Fifty gallons per hour were administered during the following two hours. At 5 P.M., to the surprise of all, the patient showed signs of consciousness, and at 6 o'clock was able to recognize those about him. With the return of consciousness there was a rapid improvement in the general condition. Though he was practically out of danger, his condition remained serious for forty-eight hours. So intense was the general prostration that it was fully one month before the patient was able to be about.

Despite the most skilful and persistent treatment from the hands of the most prominent consultants of the vicinity, there is every reason to believe that, but for the timely administration of oxygen gas, the case would have terminated fatally before the day was over. Considering that the patient had been totally unconscious for fully eighteen hours, and that during this time the symptoms had indicated that recovery was quite impossible, the result cannot be regarded other than remarkable.

There is no doubt that could the experience of physicians with the administration of cocaine be arranged systematically, much of vital importance could be brought to light. Definite rules governing its use could be formulated, and cocaine administration reduced to a scientific basis. The deaths from medicinal doses of cocaine, which are now laid to an indefinite susceptibility, would doubtless be found due to well-defined and preventable causes.

The poisonous action of cocaine seems to assert itself in two distinct ways. First: Collapse of the subject within a few minutes of its administration. This doubtless is the most common action. Second: Several hours following its use, as in the case herein mentioned, showing that it has a cumulative tendency.

This case also suggested the line of action mentioned in another part of this article, for the prevention of accidents from the use of cocaine, as well as for the treatment of acute cocaine-poisoning; and it is the belief of the author that by taking special care to detect contra-indications, and to follow out this line of precaution and treatment, the untoward action of cocaine would be of rare occurrence, and recovery from poisoning from it would be the rule.

A TELEGRAM from Dr. Lapthorn Smith announces that the bullet located by the X-ray in the leg of the patient in the Montreal Hospital was found, on operation, at the exact spot indicated, and was successfully removed

CLINICAL MEMORANDUM.

REPORT OF TWO INTERESTING CASES: ANEURISM OF THE THORACIC AORTA, WITH NECROPSY; ALSO MEDIASTINAL TUMOR, WITH NECROPSY.

By HERMON C. GORDINIER, A.M., M.D.,
OF TROY, N. Y.

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Case I.—J. H., aged 48; born in Ireland; occupation, molder. Family history negative, he having no knowledge of his family. Denies syphilis; never has had rheumatism; has been a hard drinker. He is well nourished, stout; height, five feet eight inches. He dates his present trouble back two months, when he contracted a severe cold, accompanied by a violent spasmodic cough, with great dyspnea and the expectoration of large quantities of mucus, but no blood. Three weeks ago he noticed a swelling on right side of neck; a week later observed a marked swelling in right arm, and particularly in hand. His breathing was so disturbed that he was obliged to rest at night in a semi-erect position. For six weeks has suffered with severe, deep-seated pain, beginning in the right shoulder, passing into the infraclavicular region near the sternum and running up the back of the head. Legs never swell; no difficulty in speaking or swallowing; no change in the voice; marked dyspnea on exertion. At times suffers from attacks of violent palpitation; movements of the head bring on severe attacks of dizziness. He is generally cyanosed; has no pain of a boring character.

Physical Examination.—The collar of flesh, so aptly described by Bramwell, well marked. In supraclavicular regions above the middle of the clavicles and extending to their acromial ends, well-marked swellings are observed, which on palpation feel like bunches of veins filling from above. Superficial veins in mammary regions distended, veins of left arm much more distended than those of right. Left arm more edematous. In left lower axillary region a decided sinking inward during inspiration was observed; between fifth and sixth ribs exists a depressed scar, result of abscess from a diseased rib.

Inspection of right mammary and infraclavicular regions over an area the size of one's hand elicited an expansile pulsation, most manifest during suspended respiration. In right infraclavicular and upper mammary regions, between second and fourth ribs, near sternum, is to be felt, on deep pressure, an expansile pulsation. The apex beat is diffused, and covers an area the size of a silver dollar; it is downward and to the left, in sixth intercostal space, an inch outside of mammillary line. During quiet breathing both sides expand equally; breathing short and shallow, respiration thirty-six per minute; on deep inspiration right side seems to move most. Right side is fuller than left; this is particularly true in mammary region near sternum. Despite numerous efforts, tracheal tugging could not be elicited. No bulging in interscapular region. The movements of the vocal cords were normal. Pulse in right radial much less in volume than in left; a decided difference exists in the pulse of the carotids, the right carotid pulse being hardly perceptible, the left full and tense. Percussion.—Dullness over the following territory: beginning an inch to the right of the sternum, at second rib, extending inferiorly to fourth rib, extending nearly to left border of sternum, and on that side as low as the third costal cartilage; longest diameter from right to left, three and a half inches; shortest vertical, nearly three inches. Aortic second sound accentuated over the above area. Faint systolic and diastolic murmurs heard in region of dulness. No episternal murmur; no murmur was heard in the mouth, as is often the case in concealed aneurism. Soft systolic murmur at apex faintly transmitted into axilla. Liver dulness two fingers' breadth below margin of ribs; spleenic dulness normal. No murmur over abdominal aorta; no differences in femoral pulses; no ascites. Respiratory murmur more feeble on right side. Evidence of sympathetic irritation exists; pupils irregular; right pupil dilated; left moderately contracted; right responds sluggishly to light and accommodation, left responsive to both acts. Slight fibrillary twitchings in tongue; reflexes normal; no difficulty in gait. Urine normal; excretion scant.

December 8, 1894.—Patient very cyanotic. Edema of left arm increased; great pain, stabbing in nature under left nipple; dyspnea on the increase; vocal fremitus increased over whole left side posteriorly; dulness in left infrascapular region; crepitant râles, bronchovesicular approaching bronchial; temperature, 100° F.; no expectoration.

December 15, 1894.—Dyspnea great; complete orthopnea; cyanotic to an extreme degree; both arms and legs very edematous. Respiration, 60; pulse, 100, almost imperceptible; collar of flesh more prominent; expansile pulsation more plainly visible.

Patient died December 17, 1894. Autopsy twenty-four hours after death.

Notes.—Rigor mortis well marked. Soft edema of upper extremities more marked on left side; edema of same character in the legs. Neck much swollen. Veins traversing anterior chest wall distended, all superficial veins dilated and full of blood. Muscles soft, flabby and pale, full of serum. Pericardium contained about six ounces of serous fluid. Evidence of old pericardial adhesions on left ventricle and upper part of right. Apex of right lung adherent by tender adhesions, free over rest of surface. Left lung universally adherent, the adhesions being well organized.

Springing from the base of the heart and extending to the right just beyond the junction of the clavicle with the sternum, posteriorly to within one and a half inches of the vertebræ, to the left about half an inch beyond sternal border, and downward as far as the lower border of the fourth costal cartilage, exists a perfectly globular tumor adherent to the sternum and costal cartilages and to the rest of the lungs; the right primary bronchus was found decidedly compressed; the right subclavian artery and the innominate vein were compressed; the right carotid

artery was greatly compressed, leaving but a slight lumen to the vessel. Left subclavian and carotid arteries were dilated and atheromatous. The aneurismal sac was almost a perfect globe, and was filled with laminated fibrin about an inch thick.

Transverse diameter of sac, five inches.

Vertical diameter of sac, six inches.

Antero-posterior diameter, five inches.

The sac arose from the ascending division of the thoracic aorta just above the sinus of Valsalva, the aorta was generally atheromatous, coronary arteries patent, but lumen narrowed from atheroma. Aortic valve thin and papery, aortic opening dilated and incompetent, left ventricle enlarged and cavity dilated, muscle wall firm, mitral valve normal, orifice enlarged. Pulmonary artery filled with an ante-mortem clot. Right ventricle normal as to size, muscle wall soft, pulmonic and tricuspid valves normal. The whole left lung hepatized passing into the third stage. Liver enlarged and apparently fatty. Kidneys undersized, capsules adherent, cortical substance thinned; microscopically they were typically granular.

Case II.—*Case of scirrhus cancer having its primary seat in the tunica adventitia of the aorta.* This case was first observed and demonstrated to my class in medical diagnosis at the Rensselaer County Hospital, November 20, 1895.

May 20, 1895. Mr. E., age 50 years; occupation, grocer. Two years ago had a severe attack of la grippe; recovered perfectly. No history of malignant disease in family.

Present trouble began about four months ago, when he noticed that his health was failing; that he was becoming emaciated, and that he had no desire for food. Eight weeks ago first noticed a severe pain at midsternum, which usually passed backward between the shoulder blades. In a short time began to experience a difficulty in swallowing, particularly solid food. This distress increased until it was absolutely impossible for him to swallow any solids, and at times liquids would distress him severely. Has noticed a gradual increasing difficulty in breathing. Bowels regular. No epigastric pain.

Physical Examination.—Patient short, stout; fairly well nourished; face emaciated; generally sallow. Acne rosacea slightly masked. Chest symmetrical, no local bulgings, no abnormal pulsation, no edema of chest walls or of upper or lower extremities. Veins of chest prominent, those of right side most distended, fill from above. A swelling exists in the inner supraclavicular region near sterno-clavicular junction, which, on palpation, proved to be a mass of movable lymph glands. Liver palpable an inch below ribs. Edge smooth, but very hard and tender. Slight dulness over whole right side posteriorly; respiratory murmur much less distinct than on left side, seeming to be muffled and distant. Vocal fremitus and resonance diminished on right side. Cardiac dulness normal; heart sounds feeble; no adventitious sounds. Splenic dulness normal. Movement of vocal cords normal. Pulse equal, small. 120. Pupils minutely contracted, respond sluggishly to light and accommodation. Reflexes normal. Two distinct splashing sounds on auscultation of the esophagus. Urine normal in amount, sp. gravity 1020; no casts, sugar, albumin, or blood. Blood: 3,000,000 red, 60,000 leucocytes, mostly neutrophiles. Poikilocytosis well marked.

The symptoms taken collectively in connection with the physical signs lead me to diagnose a mediastinal growth probably malignant, which had compressed the esophagus, producing the dysphagia and the double splash heard on auscultation. The distant, feeble respiratory murmur, the diminution of vocal resonance and fremitus as well as the dyspnea, can be well explained by the compressed bronchus. The minutely contracted pupils, which responded but sluggishly to light, were doubtless due to paralysis of the sympathetic with overaction of the motor oculi nerves. The overdistended and greatly dilated chest veins may be explained by compression of the vena cava superior or the vena azygos. I think in this instance, from the location of the principal growth in the posterior mediastinum, from the absence of any enlargement of the veins of the head or neck, that the vena azygos vein was compressed, interfering largely with the intercostal and possibly mammary veins. The malignant character of the growth was suggested by the rapid development of a cachexia, loss of flesh and strength, the enlarged lymph glands; increase in size of the liver, coupled with its very hard and tender border, and lastly, the marked leucocytosis which existed on several occasions.

June 15, 1895.—Progress steadily downward, emaciating rapidly, dyspnea and dysphagia greatly increased, lips and hands cyanotic, pulse soft, small, and rapid, 140; heart sounds very weak; friction rub over left nipple; slightly jaundiced.

June 19th.—Very cyanotic; pulse 160; respiration 60. Patient drowsy, pupils pin-pointed, tongue dry and brown. Expired at 7 P.M.

Autopsy twelve hours after death. Rigor mortis well marked. Slight icteric tint of skin; chest veins dilated and full of blood, panniculus adiposis well marked. Right lung collapsed, left lung held in place by general adhesions. Liver projected two inches below free border of ribs, infiltrated with small and large areas of cancer. Between right primary bronchus and esophagus posteriorly and aorta anteriorly, to which it was inseparably blended, existed an oblong mass about three and one-half inches long and two inches in breadth, which compressed, in connection with a number of enlarged bronchial glands, the right primary bronchus to one-third its natural size. The esophagus was compressed so that it would just permit the introduction of a lead-pencil. Stomach undersized, otherwise normal. Pancreas, spleen, and kidneys normal. No retroperitoneal glands enlarged. Microscopic examination of sections from main mass shows it to be a scirrhus growth, starting, I think, from the tunica adventitia of the aorta, with secondary deposits of a like character in the liver, lungs, and lymph glands.

OBSTRUCTION OF BOWEL BY A LARGE GALL-STONE.

By THEO. G. DAVIS, M.D.,
of Bridgeton, N. J.

Mrs. P., aged 62; a well-nourished, active, hardworking woman, has had during the past three years, several attacks of vertigo, which have been attributed to the effect of a somewhat dilated, irregular heart, or overwork.

During the present year she has had frequent attacks of diarrhea, with so-called bilious symptoms, not severe enough to cause her to consult a physician until September 12, 1895, when, after overworking on a very hot day, she had an attack of vomiting and purging, followed by such prostration that she returned to her home and I was called. I found her with a temperature of 101½° F., complaining of great muscular soreness, especially in limbs and abdomen, with slight retraction of head, somewhat dilated pupils and staring eyes, and a condition of mental apathy, in which answer to all questions was: "I don't know."

Thinking, from the history obtainable, I had a case of spinal meningitis, with involvement of base of brain or perhaps a beginning of rheumatism, I gave aconite, phenacetin, and sodium salicylate. The fever and soreness subsided, and in a few days were gone, but the peculiar mental condition lasted fully two weeks, gradually improved, the patient convalesced, and was about the house as usual.

Owing to trouble and worry she became much depressed, and, five weeks after attack just described, again began to vomit, without purging; a similar mental condition developed; there was no fever: the heart was slower and more regular than usual; she was very restless and had slight soreness and abdominal distress, but no pain even on deep palpation—the soreness was greatest in the region of gall-bladder and head of cecum; at no time was there jaundice, and no itching of skin except when morphine was given to quiet restlessness.

The vomiting, which was at no time stercoraceous, continued for eleven days, during which time there was *absolute constipation*; on the twelfth and thirteenth days there were loose movements; on the fourteenth a great desire for stool, which was ineffectual.

Examining the rectum I found a hard, movable body, which, when removed by stretching the sphincter, proved to be an ovoid cylindrical gall-stone, measuring in its least circumference 3⅞ inches, and in its greatest circumference 4¼ inches, and weighing 265 grains.

The patient made a gradual recovery.

Reviewing the case, I think at the first attack the gall-bladder ulcerated and the stone passed into the duodenum, slowly making its way through the small intestines; until reaching the ileo-cecal valve it caused complete obstruction, lasting eleven days, and during the next two days reached the anus.

The mental symptoms were doubtless caused by auto-intoxication.

REPORT OF A CASE OF PERFORATIVE PERITONITIS FROM A FOREIGN BODY IN COLON ASCENDENS.

By K. HOEGH, M.D.,
of Minneapolis, Minn.

E. S., male, age 43; brakeman on a freight train; had always enjoyed good health and been of good habits, when he, about the middle of December, 1895, began to make occasional complaints of griping pain in abdomen; he continued to work, and took no medicine. December 27th or 28th the pains were worse, so that instead of going out on his train he remained at home, and did not resume work before the 11th of January, 1896. While at home he did not go to bed or consult a physician, but took various saline cathartics, without, however, getting what he considered an adequate response from them. He worked on his train to 17th of January, when he was taken severely ill with abominal pain. He consulted a physician at the place where his train was at that time, upward of two hundreds miles from home. He came home the next morning in some pain, unable to work; went to bed, where I found him about noon the 18th. He was suffering from quite severe colicky pains; had had some very small passages after enemata, without relief of the pain. Since the previous day he had vomited whatever he took into his stomach, first food, and afterward water, which he occasionally had kept down for half an hour. It had a greenish color, and was mixed with some grumous, blackish shreds: its exact character could not be determined; it had no fecal odor. In the intervals of pain he had a placid expression, but at times his features and bearing would indicate great suffering. He would get out of bed, bend over, and groan. Abdomen was slightly distended; in no region was there any considerable tenderness upon moderate pressure; but deep pressure was disagreeable to him everywhere, most so above the navel, and behind in the right lumbar region; no tenderness over the seat of the appendix; none in the region of the gall-bladder; none over the stomach. Tongue moist and clean, temperature 99, pulse 60, respiration 22. Treatment consisted in a warm, moist application to abdomen, and enemata of asafetida with opium. He passed a bad day, and a worse night, the colicky pains continuing; vomiting however became less frequent. The 19th the temperature was 99.2, pulse 52, respiration 20, abdomen distended a little, tenderness the same as previous day, viz., some in right lumbar region, and some around the navel, more marked on right side. Tongue remains moist and clean, and his general aspect good, between the cramps; morphine administered hypodermically. On the 20th the condition was very much the same; his urine was found clear, acid, sp. gr. 1022, free from albumin and sugar, and no indican; temperature 98.3, pulse 56, respiration 21; tongue moist and clean. He had had no passage by the bowels, but vomiting had ceased. During this day, however, a sudden change for the worse took place. Dr. A. Barnes saw him in the evening, found abdomen quite tympanitic and tender; he was able to demonstrate the presence of free fluid in the abdominal cavity; tenderness well marked, most so around the navel;

liver and spleen dulness abolished. The bowels had not moved, and vomiting of a grumous fluid had taken place twice during the day—temperature 101, pulse 70. On the 21st he was found in very much the same condition as the previous night: his dyspnœa was more marked; there had been no movement of the bowels, but vomiting had ceased. His tongue, which had become dry the previous day, remained so—his features indicated collapse;—temperature 101, pulse 100. A 3 o'clock in the afternoon a consultation was called, and Drs. David Thomas and A. Barnes saw him with me. An examination of rectum proved only that the intestine was empty. He was now so weak, with a pulse of 124 and dry tongue, that a laparotomy was considered unjustifiable. While the presence of general peritonitis seemed evident, it was impossible for us to reach any conclusion as to its cause: it could not well be from any inflammation of the appendix, for the local tenderness at the characteristic point was absent; nor does appendicitis usually run a course beginning with afebrile colic with free intervals. Hepatic colic was also ruled out as a probable explanation; nor could it be a gastric ulcer, although such ulcers may run a latent course and reveal themselves by a sudden perforation. A suspicion was entertained that the case was one of acute pancreatitis, although this disease is not usually afebrile. It had been this very uncertainty in the diagnosis, which had prevented an early laparotomy, when it might have seemed advisable. About midnight the 21st he became delirious, and died at 4 A.M. the 22d. A necropsy was held the next afternoon by Dr. Palmer Findley, in the presence of Dr. A. Barnes and myself. Only the abdominal cavity was opened, as the family had reluctantly given their consent to the necropsy. The bowels protruded very much, being distended by gas; they were of a glistening, pale appearance, not injected, not covered by lymph or pus; some fluid was seen in the flanks, a strong fecal odor was observed, the cause of which was immediately apparent by the escape of gas in bubbles, mixed with minute particles of feces, which came out through three very small, hardly visible openings in the colon ascendens at a place where it was loosely agglutinated by recent adhesions to a coil of the small intestine, about three and one-half inches from the ileocæcal valve. In one of these holes there was sticking out for about one-third of an inch the sharp point of a Japanese toothpick, which was extracted and found to be bent by a "greenstick" fracture, so that the thick end formed a very acute angle with the pointed end. It seemed, also, that this end had engaged in one of the minute openings, lying close to the one through which the pointed end projected. Upon trying to separate the adhesions a large hole was accidentally torn in the adjacent part of the colon ascendens, and feces ran out, contaminating the fluid in the iliac fossa which had seemed to be clear. The cecum was lifted out; it was very much distended by thick pultaceous masses of feces, in which undigested (or partly digested) grains and some coarse, finely minced fibers (cabbage?) were discovered. The appendix was healthy; the inner wall of cæcum was somewhat congested, its outside wall apparently healthy up to near the place in the colon where the perforation had taken place, where there was a small area of deep purple ecchymosis. The ascending colon showed only the aforesaid small holes, now united into one. The remainder of the intestinal canal appeared perfectly normal, pale, and with whole and healthy mucous membrane. The appearance of the stomach, liver, gall-bladder, pancreas and mesentery was normal.

Taking the history of the case and the post-mortem appearances together, it seems fair to attribute the perforation of the bowel to the toothpick. The griping pains, five weeks before death, may have been produced by the point of toothpick engaging in the mucosa; injudicious purging producing violent peristalsis pressed the toothpick further in; probably a minute suppurative focus was established, surrounded by adhesion to a neighboring coil; the violent muscular efforts incident to his occupation tore the adhesions, and a localized peritonitis took place around it of an agglutinative character; but this was overtaken by a destructive necrotic process, which finally brought about perforation into the general peritoneal cavity. There were several ways of interpreting the mild previous peretonitis, and I did not feel justified in undertaking an operation which, if it had not revealed a removable cause, might have been severely criticized. It is a precarious matter to perform a laparotomy when it is not possible to make even a probable diagnosis.

MEDICAL PROGRESS.

Rupture of the Uterus, with Recovery.—Queisner (*Centralbl. für Gynäkologie*, 1895, No. 51, p. 1341) has reported the case of a woman, 38 years old, who in the course of her ninth labor experienced a sense of something having torn in the abdomen. The pains, which previously had been active, suddenly ceased, and the woman lost consciousness and presented the appearance of collapse. External examination showed the breech to be above and the head at the superior strait; the small parts could not be detected. On introducing the hand into the dilated os a uterine laceration, between four and five inches long, could be felt at the right side of the fundus, in which rested the right lower extremity of the fetus, which projected into the peritoneal cavity through a tear two inches in extent. The umbilical cord was pulseless. The right foot was carefully drawn into the uterus, and version readily effected. The placenta was seated upon the anterior uterine wall, and was removed by the hand. After the removal of the fetus the uterus contracted well upon the left side, the right half remaining relaxed and boggy. The pulse was improved by injections of ether. The hemorrhage was slight and tamponade was unnecessary. A five-pound sand-bag was placed over the uterus, a bandage applied, and opium administered. The woman was out of bed on the fourteenth day. After the lapse of four months the uterus was anteverted and displaced to the right. Upon the right side a firm, sensitive cicatrix could be felt. Five months later the cicatrix could still be appreciated, but the sensitiveness was less. The only predisposing influence to which the rupture of the uterus

could be related was the lifting of a heavy weight, as there appeared to be no disproportion between the uterus, the fetus, and the uterine contractions.

Acromegaly Complicated by Posterior Sclerosis.—At a meeting of the Medical Society of Hamburg, NONNE (*Deutsche medicin. Wochenschr.*, 1895, No. 4, Suppl. No. 3, p. 14) reported the case of a woman, 41 years old, without hereditary predisposition, in whom there had been present for three years, following labor, symptoms of acromegaly. The thyroid gland was not appreciable, and there was no dulness on percussion over the sternum. The visual fields were normal for white, but contracted for colors, upon the right in greater degree than upon the left. Visual acuity was lessened, in consequence of beginning optic atrophy. The pupils were contracted and reacted imperfectly to light-stimulus and in accommodation. The knee-jerks were wanting, and lancinating pains were present in both lower extremities. There was no ataxia, no impairment of sensibility, no paresis, no derangement of the function of the sphincters, and no tenderness on pressure on nerves or muscles.

The Nervous Complications of Erysipelas.—CROCHET (*Thèse de Paris*, 1895; *Rev. des Sc. méd.*, 1896, No. 93, p. 161), in a collection of 597 cases of erysipelas, found nervous complications in 53. Among these were syncope at the onset; delirium (independently of involvement of the scalp), meningitis, enfeeblement of the sphincters, choreiform movements at the height of the disease; and during convalescence vertigo, visual disturbances, amaurosis, paralysis of the oculo-motor nerve, paralysis of the extremities, pseudotabes, symmetrical gangrene of the extremities sensory, disturbances, auditory disturbances, and neuralgia. In those predisposed it was found that erysipelas may excite neuroses such as hysteria, and exceptionally psychoses such as general paralysis. These complications are to be attributed to the action of the toxin of erysipelas upon the nervous structures, as demonstrated experimentally. The possibility of secondary infection must, however, not be ignored, as pneumococci, alone or associated with streptococci, have been found in the exudate present in a case of meningitis, complicating erysipelas. The various nervous complications noted usually terminate in recovery.

Ascending Degeneration of the Pyramidal Tracts in a Case of Transverse Syphilitic Myelitis.—DEJÉRINE and SOTTAS (*Archives de Physiologie*, 1896, No. 1, p. 128) have reported the case of a man, 67 years old, who at the age of 30 years had a chancre followed by manifestations of secondary syphilis. Four years later he suffered from transient weakness of the legs, and a year after this from sudden transitory paraplegia predominating in the right leg, with retention of urine. This condition grew progressively worse for two years, and then remained stationary. At the age of 62 the man presented spastic paralysis, the more pronounced upon the right, with unimpaired sensibility, with enfeebled sphincters, and with muscular atrophy of the right side of the body. Three years later there was an aggravation of the condition, with wasting of the legs, impairment of sensibility, and incontinence of the sphincters. Cystitis and bedsores developed and led to a fatal issue. Upon post-mortem examination, brain, spinal canal, and soft membranes were found intact. In the mid-dorsal region of the cord, however, there existed the remains of a transverse inflammatory lesion, microscopically presenting the appearances of a syphilitic meningo-vasculitis. There had evidently been disseminated softening followed by sclerosis of the nervous structure of the cord, particularly in a segment included between the fifth and the ninth dorsal roots. Ascending degeneration of the postero-median columns and of the direct cerebellar tract had taken place and descending degeneration of the pyramidal tracts: but, strangest of all was an ascending degeneration of the anterior and later pyramidal tracts.

THERAPEUTIC NOTES.

Thyroidtherapy as Applied to Psychoses Associated with Goitre.—REINHOLD (*Munchener medicin. Wochenschrift*, 1895, No. 52, p. 1205) reports a series of interesting observations showing that the administration of fresh thyroid gland or dry extracts of the gland to individuals suffering with psychoses in association with parenchymatous goiter, while followed by pronounced diminution in the size of the enlarged gland, is unattended with any influence upon the mental state. On the other hand, the medication also occasioned no unpleasant effects.

The Prophylaxis of Acute Articular Rheumatism.—On the hypothesis that acute articular rheumatism often arises by infection through the pharynx STEKEL recommends the employment of a gargle containing citric acid in all cases of pharyngitis and tonsillitis of rheumatic type.

Take of

Citric acid	2½ drams
Water	3 fluid ounces
Saccharin	6 grains.—Mix.

Dose: Add a tablespoonful to a glass of water, and use frequently as a gargle, swallowing a mouthful.

For infants, less than a year old, the following formula is recommended:

Take of

Citric acid	15 grains.
Water	2 fluid ounces.
Syrup of Lemon	1 fluid ounce.—Mix.

Dose: A teaspoonful every half-hour.

—*Médicine moderne.*

For Uterine Leucorrhea.—

Take of

Tannic acid	2 ounces.
Pure alcohol	1 fluid ounce.
Beechwood creosote	1 fluid ounce.
Distilled water	8 fluid ounces.—Mix.

Dose: A tablespoonful in a quart of warm water, to be used as a vaginal injection, three or four times a day.

—LIROLA, *Semaine médicale.*

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POSSIBILITIES OF THE ROENTGEN RAY IN MEDICINE.

Now that the early excitement created by Röntgen's announcement of his discovery has partially subsided, the reflecting men of the scientific world, as well as the profession, are beginning to eliminate the visionary speculations that at first suggested themselves, and determine the definite directions in which the X ray can be of practical value. We have now sufficient information as to its real nature and present limitations to enable us to form a fairly reasonable and definite estimate of what we may hope from it in our own particular field.

Let us consider, then, in the first place, what we have discovered that it will not do. The wild fancy that this power was a peculiarly penetrating form of "vision"—a sort of photographic second sight or "materialized eye"—which could be caused to calmly penetrate to just such depths of the human tissues as the operator desired, and reproduce a complete picture of everything it found at that particular level, is far from the truth. The well-known statement of the charlatan to his gaping patient, "I've been looking at your kidneys, sir, for the last ten minutes, and they are badly shrivelled, sir, badly shrivelled!" is not to be literally realized. Unfortunately for our antivivisection friends, it must be admitted also that the early hope inspired by this power that we should thus be enabled to watch the various functions of the internal organs of the body, and so render vivisection unnecessary, is fast fading into the baseless fabric of a dream.

The futility of such speculation becomes promptly apparent when we recall the fact that this new picture is not a photograph at all, but simply a shadow or silhouette, so that no details whatever, except as they depend upon density and thickness, can be reproduced. Indeed, the term photograph is doubly inappropriate, since it is not light rays at all that are concerned in the process, but, as we pointed out in our last issue, certain totally invisible vibrations given off in electric incandescence. These, from their being as yet a literally "unknown quantity," have been (according to the painfully familiar formula of our schoolboy days) termed by Röntgen the X ray, and Schubert, of Hamburg, actually proposes the term "xograph" for their product and "xing" for the process.

It will be remembered that Prof. Goodspeed in our last issue suggested *radiograph*[1] and *radiography* as appropriate terms, and Dr. Cattell coined the words *skiagraph* and *skotograph*.

As far as our present knowledge goes the positive advantages to medicine seem to be limited to three conditions: fractures, dislocations and tumors of bones, encysted bullets, needles or pieces of glass in the tissues, and earthy calculi. In the first class of conditions its advantages would appear to be slight unless great advances upon present powers and methods can be made. The *tactus eruditus* is certainly a delicate and reliable sense in investigating fractures and dislocations, and it is questionable how much help can be obtained by such crude and blurred shadow pictures as can at present be obtained. In recent cases of fracture or dislocation, the delay and discomfort to the patient necessarily involved in the

[1] Dr. A. Rose writes that *radiograph* is ahybrid word, *radius* being Latin and *graphe* Greek, and hence is an unfortunate suggestion.

application of the method would be practically an insuperable objection to its use for purposes of diagnosis. This objection, however, has been met by the instrument[1] for visual use, invented by Prof. Magie, of Princeton.

As a means of ascertaining that the parts had been placed in proper position after adjustment, it would, however, be most valuable, for of course all splints and dressings, except plaster or metallic splints, would be as "translucent" as the soft tissues themselves. Its principal value, however, would be in obscure cases with much swelling, "green-stick" fractures for instance, in partial luxations, and in medico-legal cases when the proper setting of a fracture or reduction of a dislocation was in question.

In the locating of bullets, some brilliant results have been already recorded, in which the bullet, beyond the reach of touch or probe, has been found by the X ray and successfully removed. It might not be out of place here to call attention to the fact to which Prof. Bergmann, of Berlin, has alluded, that a bullet successfully encysted in the tissues becomes a harmless body, and the danger now arises that every one who has been carrying bullets, needles, and shot for years, without harm to himself, will be possessed with the passion to have them located and dug out. Against this, Prof. Bergmann protests as being dangerous and unnecessary. It must be remembered that as a rule it is the tract through which the bullet has plowed that is the source of danger, and not the missile itself.

In locating renal and urinary calculi, the Röntgen method will be of great value, although of course only as an aid to the sound in the more obscure cases. And Nüsser, of Vienna, has already used it with success in demonstrating the presence of a stone in the pelvis of the kidney. It is not yet known whether gall-stones are sufficiently opaque to be detected by its rays.

So far as present developments have gone, Hamlet's ardent aspiration, "Oh that this too, too solid flesh would melt," has been so completely fulfilled that not a trace of any of the soft tissues of the body remains, except a light haze, even the articular cartilages being so completely penetrated that the bones appear entirely separated from each other at the joints.

One interesting and important field of investigation remains to be considered; and that is the effect of the X ray upon germ life. It is a well-known fact that sunlight possesses a decidedly germicidal effect, and that if the prismatic rays be passed through a culture-tube containing a fluid medium, the various bacilli therein will exhibit a selective action. And it has occurred to more than one worker along the lines of bacteriological investigation that it was quite within the realm of possibility that the Röntgen ray would be found capable of killing bacteria within the human system.

During the past week, in order to test the influence of the Röntgen rays upon germ life, pure cultures of diphtheria bacilli were obtained from Dr. W. H. Park, of the Bacteriological Laboratory of the New York Board of Health, and subjected to the direct effect of the rays from a Crookes tube for thirty minutes. Cultures were made both before and after the exposure which were personally developed in the laboratory by Dr. Park, who reports that no effect whatever was discovered to have resulted from the exposure. It is therefore only possible to announce one experiment, with negative result, while the investigation is being further pursued along the same and parallel lines.

[1] This is described in the MEDICAL NEWS of February 15th.

THE MEDICAL CORPS OF THE NAVY.

THE report of the surgeon-general of the navy for 1895 called attention to some very important, even startling, facts, in which not only the well-being of the corps is concerned, but the entire profession of the country as well. It appears that the corps, when full, numbers 170 men; that a medical examining board is constantly in session, but that for a number of years sufficient material has not appeared to fill the list, and, moreover, that of the nineteen who came for examination the past year to fill the large number of vacancies, only four were found competent, though the examination is one in which a man of ordinary capacity has no good excuse for failure.

It will be remembered that our navy has many new and splendid ships; that these are often in foreign ports, where many opportunities for cul-

ture and improvement must offer; also that shore duty is usually in or contiguous to great cities, with all the advantages which accompany such residence. Why is it, then, that the medical corps of the navy is so unpopular and so little in favor with the profession that it alone, of all the branches of the public service, is unable, year after year, to obtain its full complement of men?

The first objection which appears is an insuperable one, because it affects the dignity and self-respect of every man who offers himself to the service. It seems to be based upon the feeling among officers in other branches of the navy that the profession of medicine is inferior to the profession of arms; otherwise, why is it that the medical officer who begins his service, who also, by the way, must begin in a grade lower than in the medical service of the army, is at once placed on a lower social plane and with conditions inferior to those of his fellow officers—that is, he cannot mess with others of his profession on board ship—he must sleep on a bunk in the steerage, and for three years he must lead the steerage life. We can hardly imagine anything more depressing or humiliating to a young man of spirit and ability than such treatment, and we wonder that any one can be found who will accept service under such requirements. It is the melancholy fact that the United States is the only country having a navy of any importance in which the medical service is subjected to such indignities.

The law as to the retirement of medical officers in the navy seems most inequitable. The army medical officer can retire after thirty years of service, the naval medical officer only after forty; and, as the circumstances of his education, which, be it observed, is always obtained at his own expense, in distinction from the line officer, who is educated by the government, as these circumstances compel him to enter the service at least five, and perhaps ten, years later than the line officer, the latter is given a distinct advantage. In the English navy, medical officers may retire after twenty years of service. The titles, which, in the public service, always seem to excite more consideration than common sense would dictate for such conditions, are also to the disadvantage of the medical corps. It is possible that this will be remedied, if the bill for reorganizing the medical corps of the navy, now before Congress, shall be passed. The titles proposed under the new arrangement are: medical director and medical inspector (the same as at present), staff surgeon, surgeon, and surgeon of the junior grade. The regulations concerning medical officers are also inequitable with reference to rank. For example, a surgeon has the relative rank of a lieutenant or a lieutenant-commander. Furthermore, the rank of the medical officer, at least in the lower grades, is made to depend upon the conditions affecting the rank of members of the same grade in the line, a medical officer having what is known as his running-mate in the line, and his rank not increasing until that of his running-mate has increased.

If we have a correct understanding of this regulation, it becomes a matter of astonishment that such a stupid and unjust custom has been allowed to come into being—still more to persist. An officer is refused promotion, not because he has not served long enough or faithfully enough, but because promotion has not come to a co-ordinate officer in another branch of the service. We are amazed that a sense of justice should allow such partial and unfair regulations.

As a further evidence of the estimation in which the medical corps is held, it is proposed to degrade the rank of the surgeon-general from commodore, in case that grade is abolished, to post-captain, while the commodores in all other branches of the service are to be promoted to rear-admirals.

The foregoing statements are authentic. It is surprising, in view of such facts, that there is any medical corps at all, that men can be found, sufficiently capable to retain position, with such disagreeable comparisons and such odious customs constantly to be submitted to.

The medical profession asks no odds of the profession of arms, or of any other, in point of dignity, learning, and usefulness. Whatever it may have been in the past, there is now no difference of opinion on this point among those whose opinion is really valuable. If it is the policy of the naval authorities, not only to withhold adequate inducements to men of ability to enter the medical corps, but to snub and humiliate those whom they do receive, they need not be surprised

if the quality obtained corresponds to the conditions, nor that in some grave emergency, when, like pistols in Texas, the services of accomplished men are sorely needed, the question of accountability will come back upon them to plague them.

It is apparent that, however efficient our new ships may be as fighting machines, they are greatly lacking in such matters as pertain to the health and comfort of those who work them. Think of working in a fire-room for hours at a temperature of 130° F. or more. The sick-bay, on the other hand, may have a temperature considerably under 70°, and be dark and stuffy, and entirely unsuited to the wants of the sick. The difficulties of getting the wounded from the decks into the sick-bay in time of action, and hundreds of other questions in our modern navy, have to be decided by the members of the medical corps.

We know that Jack ashore, as well as Jack at sea, has a wholesome contempt of drugs. Fortunately, he doesn't usually require many, irregular though his life may be, and perhaps it is his dislike for medicine in general which has been the foundation for the ill treatment of the medical corps. The sailorman, high and low, however, should understand that there are many conditions in addition to that of dispenser of medicines, for which it is essential that a skilled doctor should be on board ship and in a naval hospital. That being the case, it should be our aim and pride to attract only the best and most efficient men who can be found—men who will compare favorably with the best in every other branch of the service.

With all the inducements that are possible, it may still prove to be true that those who are most to be desired will not enter the naval service.

Under any circumstances, the opportunities for distinction as physicians or surgeons can never be very great. They can never be as great as in the army. As sanitarians and hygienists, the naval medical corps has many interesting problems to work out in hospital and on board ship. In that direction they should bend their efforts to gain honorable distinction. Such questions as the hygiene of navy yards, the high development of naval hospitals, the preparation of litters and other appliances for removing those who are wounded in action, the ventilation of ships, the sick-bay and operating-room on board ship, the ambulance ship as tender to a fleet, etc., are all questions which are more or less unsolved, and are worthy of the best thought.

But the first step toward having an efficient medical corps is to make the conditions and surroundings such that no self-respecting man need hesitate to accept them.

BACTERIOLOGY.

COMMMENTS ON SOME OF THE OBJECTIONS OFFERED TO THE USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

THE failure of tuberculin to realize the beneficial results hoped for has frequently been advanced as an argument against the use of diphtheria antitoxin. Except in so far that the tuberculin excitement showed that too many physicians were fallible and too prone to adopt a treatment before it had been carefully tested, the failure of tuberculin as a therapeutic agent has no bearing on the value of diphtheria antitoxin. Tuberculin is properly compared with diphtheria toxin, or poison, they both being the products of the growth of specific bacteria in nutrient media.

Diphtheria is a self-limited disease, because, in part at least, the reaction of the tissues to the toxin produces an antitoxin. Tuberculosis as a rule, is not self-limited, and up to the present time we have not obtained a substance which is antitoxic to the products of the tubercle bacillus. In all animals we find the poisonous effects of the toxin produced by the bacillus of human diphtheria to be entirely neutralized by sufficient amounts of antitoxin, if it is given before the animals are profoundly affected constitutionally. Tuberculous animals, on the other hand, are killed by injections of sufficient quantities of tuberculin.

Animal experiments gave us, therefore, firm grounds for hoping that the serum would be antitoxic for the same poison in men that it was in animals. Whether in actual experience we would meet with diphtheria early enough to get these beneficial effects, only experience in actual cases of human diphtheria, not animal experiments,

could determine. Now, after three years of ever-increasing use, the men who have had the largest experience, are almost universally of the opinion that diphtheria antitoxin has marked curative power in diphtheria, and that many who are now alive would have died without its use.

A misconception concerning the effects of the use of bacterial cultures in swelling the number of cases called diphtheria, and indeed of the meaning of the results obtained from cultures, seems surprisingly prevalent.

The detection of the diphtheria bacilli in a culture from the throat proves that the throat from which it was made is infected and is a possible source of contagion. If no disease is present, it would be ridiculous to assert that the patient had diphtheria. If, on the other hand, exudate is present, the probability that that exudate is caused by the diphtheria bacilli becomes so strong as to amount almost to a certainty. As a matter of fact, in New York at least, the majority of suspected cases are proved by cultures not to be diphtheria. I believe, however, that the added interest in diphtheria at the present time causes a somewhat greater proportion of mild cases to be reported than formerly, and that for this reason percentage statistics may appear in cities to show a somewhat greater apparent reduction in the percentage mortality than is correct. There is, however, in addition to this, a marked reduction in the actual number of deaths in those cities where antitoxin is extensively used.

The results reported from the Willard Parker Hospital by different men have had a very confusing effect upon the profession, and very frequent inquiries have been made concerning them. The hospital records show the following numbers of deaths and recoveries during January of the last three years:

	Recovered.	Died.	Mortality.
January, '94, no antitoxin.	32	21	39.6 per cent.
January, '95, very weak antitoxin; temperature in wards 80–85°. .	36	15	29.4 per cent.
January, '96, very strong antitoxin; temperature in wards, except for four days, 70–75°. . .	54	13[1]	19.4 per cent.

[1]Four of these deaths occurred in persons not receiving antitoxin; two because they refused it, and two because they were moribund on admission, one dying in ten minutes.

The large number of cases of laryngeal diphtheria admitted during 1895, who after the removal of the tube appeared for the time to be doing well, only later to develop a subacute broncho-pneumonia, was indeed most discouraging.

It is true that a larger proportion of cases finally got well than in the previous year, and that the very prolongation of life in those finally dying of pneumonia showed some new and powerful influence was at work. To the children, however, it was the same whether death came early or late.

The cause of this broncho-pneumonia was carefully searched for by the physicians connected with the hospital.

It was found that the wards were somewhat crowded, and also that for certain theoretical reasons the temperature was kept in the acute wards at from 80° to 85° F. The crowding was lessened, and with the year 1896 the temperature was lowered to 70°. Since then no broncho-pneumonia has developed in any case which was not present on admission, and the results have been most favorable.

During the twenty-six days of January when the temperature was kept at 70°, nine cases were admitted requiring intubation. One of these cases, an adult, admitted on the second day of her disease, refused to take antitoxin—she died. Of the other eight cases six recovered. One of the two fatal cases, who received antitoxin, died in sixteen hours, and the other later after the development of a complicating measles. This certainly is a favorable showing, for not counting the death of the case admitted upon the second day where antitoxin was refused, there were six recoveries in eight cases. The cases admitted up to the present time continue to do remarkably well.

Only two persons who had diphtheria of any severity refused antitoxin. They both died. One of these admitted on the second day of the disease with laryngeal diphtheria was intubated the day after admission, and died the following day of heart-failure. The case was very severe from the outset. The other, a child of 13 years, admitted on the third day with well-marked pharyngeal diphtheria, died five days later of

heart-failure. I have not seen such a case die under the antitoxin treatment.

The results of the use of antitoxin in Chicago, a report of which is published in this number, show the favorable results obtained there with antitoxin, prepared in the same laboratory that furnishes that used in the Willard Parker Hospital.

At the recent dinner of the Boston City Hospital Club Dr. J. H. McCollom gave an account of the results obtained with antitoxin in the department of that hospital for contagious diseases which are also most favorable. He said in part:

"Since the department was opened on August 31, 1895, there has been 844 cases of diphtheria admitted, with 96 deaths, giving a mortality of 11 per cent.

"All of these cases have been treated with antitoxin, and the result is certainly remarkable.

"If we compare this death-rate from diphtheria of 11 per cent. since the introduction of antitoxin, with that of a death-rate in the hospital of 40 per cent. before the introduction of antitoxin, there can be but one opinion regarding the efficacy of the remedy. The effect of antitoxin in the operative cases has been very marked. In the report of the Boston City Hospital for the year ending January 31, 1895, before antitoxin was generally used, there were eighty-six cases of intubation, with seventy-four deaths, giving a mortality of 86 per cent. In the south department from August 30, 1895, to February 1, 1896, there seventy-nine intubations, with thirty-six deaths, giving a percentage of 45, a diminution of nearly one-half.

"The change in the appearance of diphtheria wards, since the introduction of the use of antitoxin, has been very marked. In making a visit one cannot help being struck with the bright and cheerful appearance of the children."

The latest results when grouped together seem to me to clearly indicate: that with serum strong in antitoxin, and with increased experience, we may hope to save very many lives by the early use of antitoxin. Until we can entirely eliminate the horse serum we will indeed have occasional disagreeable after-effects, but these will be rarely, if ever, of a dangerous nature.

William Hallock Park, M.D.

ECHOES AND NEWS.

The Rontgen ray has found rather an unexpected application in archeology. It turns its attention to the mysteries of the past as well as the present. For instance, Harold Fredricks, in the New York *Times* of Sunday, February 16th, announces that the Vienna Museum for some time has possessed as its chief treasure an Egyptian mummy, which is swathed to resemble a human being, but the inscription on which suggested it to be an ibis instead. The thing was too rare and precious to run the risk of unwinding its bandages to solve this problem, but the shadow photograph now plainly reveals the skeleton of a large bird.

Mr. Frederick M. Shepard, of East Orange, N. J., has given $10,000 to the Orange Memorial Hospital, for the construction of a pavilion for consumptives.

It is noticeable that on the Board of Managers of the Manhattan State Hospital for the Insane recently appointed by Governor Morton, are two women, Eleanor Kinnicutt and Alice Pine.

William Cæsar, a negro who had been convicted of murder, and was awaiting in Sing Sing, N. Y., the execution of his sentence, died in prison from edema of the lungs and glottis. Necropsy revealed evidences of former meningitis in a number of places with adhesions to the brain.

Recent advices from Wisconsin report a fresh outbreak of smallpox. Three cases have developed in an industrial school for boys at Waukesha, which contains between three and four hundred inmates.

Steps are being taken to organize an association of Western eye, ear, and throat specialists. A preliminary meeting has been announced for April 7, 1896, to convene at the Midland hotel, Kansas City, Mo.

Philadelphia is soon to have a large office building devoted exclusively to the use of physicians, to be known as "The Clinic." Cincinnati and New Orleans have such buildings in successful operation, and New York is also contemplating a similar project.

Bellevue Hospital Medical College and the Medical Department of the University of the City of New York will extend their medical course to four years. The change goes into effect at the beginning of the next session.

An epidemic of jaundice is prevailing in Albany, N. Y. This city has been repeatedly visited by epidemics, but in this instance no local cause has been discovered to account for the malady.

The death is announced of Dr. Richard M. Hodges, of Boston, late surgeon to the Massachusetts General Hospital and adjutant professor of surgery in Harvard University, where he was also associated with Dr. Oliver Wendell Holmes.

The medical profession of Cincinnati has suffered a great loss in the death of Dr. C. G. Comegys, which oc-

curred on the 10th instant. Dr. Comegys was an old and honored citizen, and during a long career had occupied many positions of trust with unvarying fidelity.

As was suggested in our last issue, a movement is on foot looking to the early presentation at Albany of a bill prepared for the purpose of restricting vivisection in public schools. While the avowed object is harmless when thus limited, modifications may readily be introduced during passage, and it is evident that the measure deserves close watching.

A surgical amphitheatre in connection with Charity Hospital in New Orleans has been recently completed and appropriately named in honor of the late Prof. Miles of that city.

THE last number of the *Boston Medical and Surgical Journal* notices an attempt by legislation to enforce the use of secret remedies upon the State hospitals. Such a step would certainly establish a precedent of the most dangerous type.

THE reports in January from St. Petersburg showed no evidence of abatement in the epidemic of typhus fever. Seventeen hundred cases already have been recorded.

THE *Journal of the American Medical Association* in its issue of the 15th presents illustrations and description of a new bone-cutting forceps, invented by Dr. Allen Devilbiss, of Toledo, Ohio. Its usefulness in cranial surgery is particularly apparent, and the ingenuity and simplicity of the instrument appeal strongly to the surgical mind.

THE membership of the British Medical Association has been increased recently by the admission of 227 new members.

A disastrous fire occurred in the laboratories of the Royal College of Physicians of Edinburgh on January 31 entailing great loss in apparatus and specimens. No amount of insurance can repair such damages.

THE government of India, besides recently establishing an Imperial Bacteriological Laboratory, has now taken a further step in the appointment of special sanitary officers, possessed of bacteriological knowledge, for each large cantonment. The information acquired in this manner cannot fail to place the sanitary laws of the Empire upon a more scientific footing as well as greatly increase the *data* available to the medical profession.

M. DAREMBERG, of Lyons, France, has found the exclusive use of phosphated milk of value in the preventive treatment of tuberculosis. He recommends the use of goat's milk as follows: "Phosphated milk can be obtained by making a goat absorb a daily dose of twenty grammes of powdered calcined bones mixed with ten grammes of sea salt and combined with bran, barley, or oatmeal and crushed carrots. In this way the phosphates are assimilated by the animal and supply the child with a reconstituent form of food."

SOME interesting points relating to the precision of information revealed by the microscope have been developed in a recent murder case before the authorities at Yonkers, N. Y. The details of the conflict indicated a hand-to-hand struggle. Three parties were arrested, the circumstances implicating two of them very positively. The coroner took parings from the finger-nails of all three and submitted them to a microscopist, who reported that he found blood on the nail parings of the third only. As the victim was an elderly woman, the next step in the argument is to discover the age of the person to whom the blood belonged.

THE crew of the American ship *El Capitan*, which has just arrived in New York harbor from Japan, have been victims on the voyage of what is known in seafaring vernacular as "moonblink." The captain reports that the men slept on deck in the moonlight for nine nights while passing through the China Sea. At first they suffered from night-blindness, and later they could not see at all on account of suppuration and ulcers of the lids. The constant bathing with salt water and the improved air after rounding the Cape of Good Hope helped to restore a healthier condition, but some of the men are still suffering, and one will probably lose his sight entirely.

CORRESPONDENCE.

To the Editor of THE MEDICAL NEWS.

SIR: I have just finished reading, with pleasure, your editorial on "Preference of the Diphtheria Bacillus for the Tonsil." I wish to suggest that you treat your cases of *nasal* diphtheria with the "dead air" method, by plugging the anterior nares with cotton, thus limiting the production of the baneful toxin in that inaccessible region, by shutting off the necessary *current* of air.

Very truly yours,

T. B. HILL, M.D.

THE RECENT EPIDEMIC OF DIPHTHERIA IN CHICAGO. RESULTS OF THE SERUM-ANTITOXIN TREATMENT.

[SPECIAL CORRESPONDENCE TO THE MEDICAL NEWS.]

DR. E. P. MURDOCK, Medical Inspector of this city, recently submitted a preliminary report of the work of the auxiliary medical corps of the City Health Department, the period of whose appointment terminated on the 21st of January. In his report Dr. Murdock says: "When, in the latter part of September, 1895, the daily reports of diphtheria gave indication that we were threatened with an epidemic of the gravest character in the history of the city, the assistant commissioner, Dr. F. W. Reilly requested me to give my attention to the situation and respond to the call of physicians for the administration of antitoxin, and such other duties as in my judgment would assist in staying the ravages of the disease. Accordingly I began my work by responding to the call of physicians for the administration of antitoxin, the verifying of diagnosis by bacterial examinations, and the relief of laryngeal stenosis by intubation. In connection with this work I also investigated the causes which led to rapid spread of the contagion, gave directions for isolation, made notes of

the environment, immunized children exposed, and co-operated with the attending physicians in all respects to restore patients suffering from diphtheria, and to protect the public from further exposure. Within twenty-five days I had treated ninety cases of diphtheria with only four deaths, immunized twenty-two children who had been exposed to diphtheria without a single case of contagion, and carefully noted the effect of treatment in all its phases, which led to the following conclusions, which were reported to the department:

1. "No evil or deleterious effects follow the administration of antitoxin which can be attributed to the use of the remedy either with diphtheria patients or with healthy children for protective purposes.

2. "No child treated for immunity has contracted the disease, no matter how much has been the exposure.

3. "All patients are benefited by the treatment when administered in time to accomplish any results with a reasonable hope of recovery.

4. "The administration of antitoxin does not in any way interfere with other treatment.

5. "Careful observations were made to determine the sources of infection and the agencies which led to the spread of contagion, and the following conclusions are submitted:

1. "Failure to isolate patients and prevent unlimited visiting and open communication with friendly neighbors, and even the public schools.

2. "Failure to destroy or properly disinfect clothing and other material which had been in contact with the patients, and the lack of proper fumigation and cleansing of premises.

3. "The public character of funerals to the extent of exposing the body of a child dead from diphtheria to public visitation of friends and neighbors, they not only viewing the body themselves but permitting their children to come in immediate contact and even kiss the dead child's face; nor was this all, but the bodies of children who had died from malignant diphtheria have been taken into churches for public services, and their little playmates have acted as pallbearers without the least effort to even cleanse or protect the mouth or nostrils of the corpse.

4. "The unsanitary condition of water-closets, especially in districts where old outside vaults are still in use without washouts or sewer connections.

5. "Failure to report the so-called 'mild cases' which were exposed to indiscriminate contact with their little friends, from which many a malignant case developed."

From these causes he had traced about eighty cases of diphtheria with twenty deaths, all of which might have been avoided by proper precautions. The character of the epidemic, the variety of sources for the spread of the contagion, and the increasing inquiries for the use of antitoxin caused the work to grow to such an extent, and the demand from members of the medical profession for further assistance became so great, and at the same time the increase in the spread of the disease became so marked, that Commissioner Kerr determined to apply for more assistance through the organization of an emergency staff, and in support of this request it was shown that from thirty-four to forty-three cases of diphtheria were being reported daily, with a rapidly increasing number of deaths, and the necessity was urged of an organized systematic effort to control the ravages of this disease which was destroying more lives in a single year than had been lost from smallpox in a decade. A special appropriation having been secured by the Commissioner for this emergency, the following well-known physicians were appointed and organized into an auxiliary medical corps of the Chicago Health Department, for the control of diphtheria: Dr. Samuel J. Walker, Dr. Wm. K. Jaques, Dr. G. C. Krieger, Dr. Martin J. Ritter, Dr. Rosa Englemann, Dr. H. H. Latimer, Dr. W. A. MacFarlane, Dr. R. W. Hardon, Dr. Hamilton H. Forline, Dr. J. A. Egan, Dr. Frank S. Churchill, Dr. J. W. Walker, Dr. J. J. Clausen, Dr. A. H. Roler, and Dr. J. C. Brydges. The city was divided into districts, with an inspector placed in charge of each district, three being detailed to supervise funerals and prevent so far as possible the spread of contagion from this source. Their service began November 22, 1895. The inspectors were instructed to ascertain the facts about all cases of diphtheria in their respective districts, and to use all means in their power consistent with professional ethics and under authority of law, to conserve the true interest of the public for the control of this disease. They were further instructed that there was no desire on the part of the department to supplant or in any way interfere with the prerogatives of the family physician, but on the contrary they were strictly enjoined to communicate with the physician in charge, and if possible to meet him and cooperate with him in the work in hand, so that all assistance which could be rendered to the family should be administered through the agency of its own physician, thus sustaining as far as possible the relations which should exist between a physician and his families. They were also instructed, wherever it was possible, to determine by bacterial examination the true character of the disease; to learn whether antitoxin had been used or not, and if so, on what day of the disease, and the results; and at all times, so far as it lay in their power, to subserve the interest of the family physician, while protecting the public health.

Incubators and culture boxes or tubes were furnished for bacterial examinations, and such other supplies as seemed absolutely necessary for the work. A system of rules was formulated for the isolation of patients and the care of sick rooms which would justify the removal of diphtheria display cards by the inspector, when, in his judgment, all sources of the spread of contagion were absolutely shut off, and a communication was addressed to the medical profession and the public, setting forth these points and asking their co-operation.

From the detailed reports of the members of the corps, submitted from time to time, the appended summary of the work performed has been compiled. Comment upon these figures is deferred until cases now under treatment are reported on. The summary embraces all cases disposed of up to and including January 10th.

For the present Dr. Murdock contents himself with saying that he is entirely satisfied with the result; that the members of the auxiliary corps have reason to be gratified

with the showing, and that the figures are commended to the attention of the medical profession as a contribution to the study of the antitoxin treatment and prevention of diphtheria comparing favorably with the best results obtained elsewhere.

SUMMARY OF WORK OF ANTITOXIN CORPS OF HEALTH DEPARTMENT, NOVEMBER 22, 1895, TO JANUARY 10, 1896.

Total number cases diphtheria visited,		1221
At request of attending physicians	1169	
Charity cases, (no physician in attendance	52	
		1221
Total number found convalescent on arrival,	63	
" " " dead " "	50	
All other cases,	1108	
		1108
Total number found suffering from diphtheria,		1108
" " treated with antitoxin,	1047	
" " in which antitoxin was not used.[1]	61	
		1108
Total number recovered under antitoxin treatment.	961	
" " died " " "	86	
		1047
Death rate under antitoxin treatment 8.93 per cent.		
Total number in which antitoxin was not used,[1]	61	
" " of those known to have died,[1]	32	
Death rate where antitoxin was not used 52.46 per cent.		
Total cases treated with antitoxin,		1047
" " proved (bacterially) true diphtheria,	805	
" " diphtheria not bacterially proved,	242	
		1047
Total cases bacterially proved.		805
" recovered,	753	
" died,	52	
		805
Death rate 6.46 per cent.		
Total cases not bacterially proved,		242
" recovered,	208	
" died,	34	
		242
Death rate 14.87 per cent.		

RESULTS OF ANTITOXIN TREATMENT IN 805 CASES OF TRUE DIPHTHERIA (BACTERIALLY VERIFIED).

Treated on.	Total.	Recovered.	Died.	Death rate.
First day of disease,	61	61	0	0.00 per cent.
Second " "	187	184	3	1.60 "
Third " "	372	362	10	2.68 "
Fourth " "	109	92	17	15.60 "
Later than fourth day,	76	54	22	28.94 "
	805	753	52	6.46 per cent.

Total number of children and others exposed to the disease and treated with the protective dose of antitoxin, 810

Total number of these who subsequently contracted diphtheria, 4

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, February 4, 1896.

EDWARD D. FISHER, M.D., PRESIDENT.

SCLERODERMA.

DR. LEONARD WEBER reported a case of scleroderma with the following history: Mrs. C., a farmer's wife, of German parentage, was first seen October 26, 1894. She was of medium height, quite stout, of pale and sallow complexion; hair of scanty growth. She was intelligent, and physically able. There was no hereditary or acquired taint. She had had five children and one miscarriage. During the thirteen years of married life she had had two severe uterine hemorrhages, one after a labor, and the other after a miscarriage. Three years ago she noticed that the right arm and side of the neck were becoming stiff and hard in patches. Gradually "strings" of cicatricial-like tissue developed beneath the cutis of the upper arm and wrist. There had been no contractures, and these strings had developed in the first year and a half of the affection. The sclerosis extended a little to the left of the median line. There was a small sclerotic patch on the chin and in the lower lip. The sense of touch, and the feeling of pain, and the muscular action were apparently normal. The surface temperature of the sclerosed area was about one degree lower than that on the other side. There was an effusion of fluid in the pre-patellar bursa associated with some tenderness. The right knee was also tender, but showed no effusion. She also complained of rheumatoid pains in the lower extremities and muscles, but not specially distributed along the nerve trunks. The tendon reflexes were normal. Her appetite was good, and for several months previously she had had a slight looseness of the bowel. The urine had a specific gravity of 1014, but contained no albumen or sugar. The treatment was directed first to improving the general condition—giving quinin, sodium salicylate, sodium bicarbonate, and small doses of morphia to check the diarrhea. After this she was given increasing doses of Fowler's solution, but there was no improvement in the scleroderma. On January 25, 1895, treatment was begun with the English thyroid tablets, giving five grains, three times a day. All other treatment was suspended except the use of elixir of calisaya. When seen on April 2d, after having taken 100 of the tablets, she was very much improved; the cicatricial strings and the patches on the lip and chin had almost entirely disappeared. When seen again, October 3, 1895, she had taken 280 tablets, stopping for two weeks after each 100 tablets. The improvement had been steady and marked. The speaker said he was disappointed that the patient had not come this evening, as had been expected she would do. Neurologists were inclined to look upon scleroderma as a disease of trophoneurotic origin, and he had nothing new to add regarding the etiology or pathology of the disease. All that he wished to say was that when last seen this woman was *practically* cured.

DR. B. SACHS said that he was reminded of a patient who had come under his notice about three years ago—a widow of about 45 years. She had had extensive sclerodermatous patches for a number of years previously. When first seen by him, a course of massage and galvanic treatment had been adopted, but only very trivial improvement had been observed. She was very slow in all her movements, and was unable even to pout her lips. Her face presented the appearance of one with double facial hemiatrophy. She also had very abundant deposits of yellow pigment in the hands, particularly in the spaces

[1] "Not used," either because the patients were dying when first seen, or because the families or attending physicians changed their minds after calling in the department physician and refused the antitoxin treatment.

between the knuckles. In January, 1895, she was placed on the thyroid treatment, receiving two to five grains of the pulverized extract of thyroid, three times a day. She did not return, as directed, after a week, but instead remained away for three weeks. At this time she was so greatly emaciated that he had since been led to employ the thyroid as an anti-fat remedy before he had read anything about it in the German journals. But aside from this emaciation, the scleroderma had undergone a most remarkable change for the better, and the spots of pigment had disappeared. When seen last, some months ago, she was apparently cured. The question of whether or not the scleroderma was a thyroid disease, he was not at present willing to discuss. He was fully convinced that the scleroderma was not *cured* by the thyroid; it had been necessary to keep his patient on about two grains a day of the thyroid.

DR. PEARCE BAILEY referred to a case of typical scleroderma which had lasted for five or six years, and had resulted in immobilization of the elbow and the knee. He had given her Parke, Davis & Co.'s thyroid extract, five grains, three times a day, for a month or two, but without any appreciable improvement.

DR. WILLIAM H. THOMSON said that he would certainly recommend the trial of a thyroid extract made by another firm, because he had known a case to undergo relapse after changing from the thyroid extract of another manufacturer to that of the firm referred to by the last speaker.

DR. WEBER, in closing the discussion, said that there had been very little loss in weight in his patient during the thyroid treatment—about fifteen pounds after having taken the first 100 tablets. When last seen he had not noticed any great loss of flesh. The disease was very chronic, and he feared there would be a relapse.

SYMPATHETIC NERVE SYMPTOMS WITH ULNAR PARALYSIS FOLLOWING DIPHTHERIA.

DR. B. SACHS presented a girl of 14 years, who still exhibited the remnants of a poliomyelitis of the right upper extremity, which came on when she was about 18 months old. It would be noticed, he said, that the atrophy of the arm was extreme. In March, 1895, this girl had had diphtheria, and after this had developed an atrophic paralysis of the left upper extremity, chiefly of the muscles of the hand, and more particularly the interossei muscles. This condition was associated with a narrowing of the palpebral fissure on the left side, and it was for this reason that he presented the case. There could be no doubt that ever since the beginning of the poliomyelitis the left side had been entirely normal up to the attack of diphtheria. Examination had shown that there was a diminution of all the forms of sensation in the ulnar distribution on the left side. The condition of the hand might be possibly due to a poliomyelitis, but owing to the presence of sensory disturbances and the very acute onset of the trouble after a diphtheria, this could be safely excluded. The diagnosis, therefore, was a peripheral neuritis coming on after diphtheria. The curious point was the association of the sympathetic nerve symptom with this peripheral neuritis. The only way he could account for it was by supposing that the affection must have been very near the issuance of the roots of the spinal cord, and in that part where there were communicating branches between the roots and the sympathetic nervous system.

DR. C. A. HERTER said he was not sure that the possibility of the cord being involved at the level of the ilio-spinal centre could be excluded. The narrowing of the lid and the contraction of the lid on that side would suggest very strongly that the cord was involved, or the roots were involved close to the cord. He had never seen that symptom in a peripheral lesion, which without any doubt could be said to be strictly limited to the peripheral nerves. He had seen this ocular symptom several times in cases of crushing injury to the spinal cord.

DR. WILLIAM H. THOMSON said he agreed with the last speaker that the case appeared to be one of localized myelitis. Such cases were not unknown in connection with pheripheral palsy. It would be very difficult to account for that association on any theory of peripheral neuritis. For a good while he had given up the idea that a diphtheritic paralysis was necessarily a neuritis; he thought the changes were very often characteristic of pure degenerative processes rather than inflammatory processes. More than once had he met with cases which could be explained better on such a theory.

DR. SACHS said that the case was an unusual one, and had been very closely studied by him for a number of months. He had at first supposed there was a myelitis or a poliomyelitis on the left side, but he had abandoned that idea because of one symptom which would be hard to explain if there were only a myelitis, *i.e.*, the sensory disturbances in the arm. He saw no reason to depart from the diagnosis he had expressed. He believed that this case differed from others of diphtheritic palsy in that instead of the pheripheral portion of the nerve being affected by the diphtheritic poison, the part of the plexus very near to the spinal cord was affected—in other words, the nerve roots. Between the anterior roots and the sympathetic system were communicating branches, and if one or more of these branches were affected, the influence of the ilio-spinal centre would be cut off. This would explain the loss of function without supposing an invasion of the cord.

DISCUSSION ON THE DIFFERENTIATION OF SKIN AND MUSCLE SENSATIONS AS A MEANS OF DIAGNOSIS.

DR. C. A. HERTER said that he believed dissociation of sensation was met with, especially the loss of pain and the temperature sense, with only a partial loss of the tactile sense, in cases of peripheral neuritis. He had seen cases of alcoholic neuritis in which in certain areas of lost sensibility this condition was present, and this was particularly true late in the disease when the period of hyperesthesia had passed. But he had not met with any cases of absolute loss of pain and temperature sense with preservation of the tactile sense except those which might be reasonably supposed to be instances in which the lesion could be located in the spinal cord. He called attention especially to cases of hemorrhage into the spinal cord, and particularly into the central canal. About a year ago

he had had a patient in the City Hospital who had fallen into a hatchway and struck on the right shoulder. This man said that immediately after this accident he had been partially paralysed in all four extremities. When seen by the the speaker, about two months later, there was an atypical Brown-Séquard paralysis. His right leg was completely paralyzed; the left leg exhibited loss of sensation to pain and temperature with perfect preservation of tactile sense. The internes of the hospital had made a diagnosis of syringomyelia, as had been expected. After two or three months, there had been a gradual return of pain and temperature sense. This case was undoubtedly one of hemorrhage into the gray substance of the cord. He had noted in the recent literature reports of half a dozen cases of a similar character. From this it appeared to be an established fact that hemorrhage into the central canal and gray matter of the spinal cord was very apt to give rise to this symptom. These were the only conditions under which he had met with this particular dissociation of sensations.

DR. SACHS said that it had probably been the common experience with most neurologists that whenever the pain and temperature sense were diminished or lost, and the tactile sense remained, the case was looked upon as a gliosis or a syringomyelia, particularly if associated with atrophic palsies in the parts where the sensory disturbances were manifest, and the reflexes altered in the lower extremities, showing on the whole a process most marked in the cervical portion of the cord. His experience had led him to doubt the pathognomonic value of this special symptom. Many years ago Weir Mitchell had described this dissociation of sensation in injuries of the peripheral nerves without attaching much importance to the symptom. The cases in which the speaker had observed it, were several of syringomyelia and one case of Pott's paralysis. It was the occurrence in this last disease that had led him to give this subject considerable thought. This patient, an adult, was still under treatment for the disease, which had been progressive. When first seen by the speaker, the man had been supposed to be suffering from vague rheumatic pains, but an incipient kyphosis had been found, and other symptoms indicating Pott's disease and Pott's paralysis. On making the sensory examination, he had been greatly surprised to find a very distinct dissociation of sensation in exactly the order observed in cases of syringomyelia. He had therefore been inclined to think at first that there must be some central changes in the cord in this case, but further progress of the case had shown it to be simply one of Pott's paralysis and nothing else. At the present time this man had spastic rigidity of the lower extremities without any involvement of the bladder, or other symptoms pointing to marked myelitic changes. Moreover there was now complete loss of every form of sensation. He was inclined to regard the condition therefore as having been due to the first impact of the vertebral trouble—that in this case it was practically a root trouble. We were likely to get this dissocation in all these diseases beginning, not in, but around the spinal cord, choking up some of the root fibres.

Six years ago he had seen a case presenting distinct atrophic paralysis in both upper extremities, with slight increase in the reflex in one lower extremity, and with a distinct dissociation of sensations, as seen in syringomyelia. The man gave a specific history. The progress of this case had shown that in all probability it was one of localized specific meningitis around the cervical portion of the cord. The disease had become absolutely stationary; he had developed no other symptoms, and yet there was loss of tactile sense and absolute loss of the muscular sense, with preservation of the pain sense. The temperature sense was diminished. Such a case showed that we must not attach too much importance to that special form of dissociation of sensations which had been associated with syringomelia. He had still another case under observation—one of gliosis, in which there was some dissociation of sensation, but not exactly of the kind ordinarily described as present in such cases. This symptom of dissociation, he thought, would occur where the central gray matter was affected, whether from hemorrhage or central gliosis. The greatest importance should be attached to the fact that it was a symptom of

DR. N. E. BRILL said that about ten years ago he had reported a case which would corroborate the position taken by Dr. Sachs. It was one of fracture of the lamina of the fifth cervical vertebra. The patient was then 30 years of age, and the fracture had occurred when he was about ten years of age. When seen by the speaker he had presented marked signs of compression of the cord with some anomalous muscular dystrophies. Dr. Sayre had examined the case and found undoubted callus, and on pressure posteriorly, over the injured region, there had been a sensation of cold, which the patient had himself noticed previously.

DR. HERTER said that while he would agree with Dr. Sachs that damage to the posterior nerve-roots might be a cause of dissociation of sensations, his experience had been that it was ordinarily not so. In most cases in which the vertebræ were so fractured as to give rise to compression of the nerve-roots, and in most cases of tumor in which the posterior nerve-roots were implicated, all forms of sensibility were abolished at the same time. He had seen several cases of fracture of the vertebræ with pinching of the nerve-roots. In some of these the autopsies had shown that only the nerve-roots had been damaged. In these cases all three forms of sensibility had been lost.

DR. SACHS said that he did not wish to be understood as considering disease of the nerve-roots a frequent cause; he only wished to point out the possibility of such a cause.

DR. IRA VAN GIESON said that there was much reason to believe that the long fibres in the posterior columns conveyed pressure or tactile sensations. There was probably a small complement of fibres which also conveyed muscular-sense impulses. It seemed to him to be pretty definitely shown that the column of Gowers conveyed pain sensations. There were some cases which seemed to show that temperature sensation and pain sensation traveled together. The tract of Flechsig seemed to be

concerned with a conveyance of muscular impulse. In syringomyelia, the pain tract was liable to be interrupted; but whether this column of Gowers was interrupted, or the interruptions occurred in the cord, there was invariably an analgesia of the opposite side. When these tracts in the medulla were separated, so that tumors might destroy one or the other of them, it was found that Gowers's tract, in certain cases, conveyed temperature and pain sensation; Flechsig's column, muscular-sense impressions; and the posterior columns, tactile sensation and muscular sense. Regarding the association of muscular and painful sensations clinical evidence was conflicting. In some cases there might be a distinct loss of pain sensation, but not of temperature sensation. One might conclude, therefore, that in certain individuals the temperature-sense fibres passed along with the pain fibres, and that in other cases they pursued another course. He thought that certain reported cases of syringomyelia of traumatic origin had been nothing more or less than hemorrhages into the spinal cord. Hemorrhage into the spinal cord was liable to assume a columnar distribution in the lymphathics or perivascular spaces which pass in from the anterior spinal artery. In his opinion, a lesion of the posterior roots would result, not in dissociation of sensory impressions, but in destruction of several of them at the same time.

The recovery of lost functions, as shown in Dr. Sachs's case, was an exceedingly interesting topic. The only explanation seemed to be the cutting off of the conducting path at some particular level, and the seeking out of new channels of conduction in the spinal cord.

DR. A. WIENER said that he had also observed Dr. Sachs's case of Pott's disease, and had since then examined other cases regarding the dissociation of sensations. He had been surprised to see how often this occurred. He had, however, never yet found in any particular case such a complete absence of pain and temperature sense as in syringomyelia. If the temperature and pain senses were simply diminished, the lesion might be at the roots or at the cord, but where they were completely absent we could be pretty sure about placing the lesion within the gray matter of the spinal cord.

DR. SACHS said that Dr. Van Giesen expected all forms of sensation to be abolished when there was a lesion affecting the posterior roots. In reply, he would say that a case had been reported some years ago by Thompson, in which there was clinically a distinct nuclear palsy, yet at autopsy there was found to be an infiltration of the third-nerve root-fibres, and this infiltration had evidently choked up some of the fibres, but not all of them. In the case of specific disease, it had been shown that a lesion might affect part of the root without involving all the fibres; hence, he felt that dissociation might after all be due to partial affection of the posterior root-fibres.

DR. ONUF said that if we assumed an affection outside of the spinal cord we must assume that it is at the point of union of the two roots, where the sensory fibres had passed the spinal ganglion and joined the motor roots. It was at this point that the communicant branch of the sympathetic nreve, which conducts the pupillary fibres, entered. Such a combination of symptoms could not be explained by any other lesion. Dr. Sachs's patient showed impairment of tactile sensation for the sense of pressure and that of pain. It was hardly possible to assume that such a combination of symptoms could be produced by an affection of the gray substance of the cord; we must assume an affection of the eighth cervical and first dorsal nerve close to the point where the motor and sensory roots meet the communicant branch which conveys the fibres to the pupil.

DR. HERTER said that we must distinguish quite sharply between the cases in which pain and temperature sense were absolutely lost and the tactile sense perfectly preserved, and those cases in which the tactile sense was nearly perfect, and also between cases in which tactile sense was perfect, but there was a partial loss only of the pain and temperature sense.

DR. VAN GIESON said that the example quoted by Dr. Sachs was hardly a parallel, for in that case the anterior roots were involved. The fibres of the posterior roots all had different functions, while the anterior root was strictly motor. He was willing to admit that there might be chronic processes which would only involve certain fibres of a root.

DR. CHARLES L. DANA said that: (1) Differentiations of cutaneous sensations did not occur in peripheral neuritis except to a very minor extent. The only exception which he recalled was the doubtful one of Norvan's disease, and perhaps of leprous neuritis. (2) Differentiations of cutaneous sensations occurred in spinal-cord diseases, but only completely in those diseases involving the central part of the cord (traumatic hematomyelia, syringomyelia). In columnar and spinal-root disease, like tabes, the differentiations occurred, but were never complete—*e.g.*, complete separation of touch from pain or temperature anesthesia—at least this has been his personal experience. (3) Differentiations of cutaneous sensations occurred most strikingly and completely in ponto-bulbar lesions, and were of diagnostic value here, taken with other symptoms. (4) Differentiations of cutaneous sensations did not occur in any sharp extent in organic cortical lesions. The cutaneous "locality-sense" was the one most singled out. (5) Differentiations of cutaneous sensation did not occur completely in hysterical anesthesia, though the pain sense was most involved. There were some exceptional cases in which the pain sense was distinctly singled out. The differentiation of cutaneous sensations, therefore, was least in peripheral-nerve lesions, increased in spinal-root lesions, and again in central spinal-cord lesions. It was most striking and complete in ponte-bulbar lesions, and became very slight again in cortical lesions. Through the whole series the pain sense was the one oftenest differentiated, except in cortex cerebri.

THE PRESIDENT said that in cases of transverse myelitis, although there was a loss of sensation, the pressure sense might remain. It was possible to imagine a lesion from hemorrhage into the cord, which would follow out exactly the lines of syringomyelia. It must be, however, a very rare condition.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting at the Philadelphia College of Physicians, February 12, 1890.

Dr. J. C. Wilson in the Chair.

After reading of the minutes, the Chair announced that the President's annual address would be deferred in order to give the entire time to the guest of the evening. He then introduced Dr. Simon Baruch, of New York, who had been invited to address the Society on *The Importance of Precision in the Technique of Hydrotherapy*. Dr. Baruch said that this invitation was a gratifying evidence of the awakening of the profession to the merits of hydrotherapy. He gave as his reasons for warmly advocating water, that he had obtained a large and favorable experience with it, and had found the average practitioner as poorly informed upon it as he once was. Dr. Baruch referred to having made the first plea for the Brand bath in typhoid, in 1889, which was not favorably received. The fact that by persistent agitation it has come about that the method is now practiced and taught in many hospitals and colleges, has encouraged him to continue his propaganda. Water is the most flexible remedy we possess, because we may vary its effects by a judicious use of temperature, pressure, duration, and technique. Dr. Baruch then discussed the reasons for the apathy of the profession on this subject. He regarded the principal cause to be an inexact technique, each man modifying it to suit his own ideas. He then illustrated his subject by giving the rationale of the Brand bath and its application in fulfilling the chief indications in typhoid fever, which arose from the overwhelming of the nervous system by the toxemia. He described how a strict Brand bath of 65° for fifteen minutes, with constant friction, repeated every three hours, when patient's temperature is 102.5 or over, arouses the nerve centers step by step, overcoming the toxemia. He insisted that the Brand method, which is definite in its technique, must not be charged with failures attending its modifications, any more than Bergman's aseptic surgical technique should be charged with failures attending the neglect of any one of its exacting demands. Dr. Baruch referred to the diagnostic value of early bathing. He begins with a bath of 90°, follows with 80°, and then 75° every three hours. If the rectal temperature is reduced two degrees or more typhoid fever is excluded; the smaller the reduction of rectal temperature, the more positive is the diagnosis of typhoid fever.

In the treatment of pneumonia, Dr. Baruch has devised a method whose success warranted him in commending it to his colleagues. He administers 15 to 20 grains calomel, and then envelops the chest with a thick linen compress, slit in the axillæ, to fit it high up, soaked in water at 60° F., and covered by a flannel bandage an inch wider and larger. This is renewed every hour if temperature is 100° to 102°, every half-hour if higher. No medicines or stimulants are given, except, in alcoholics; hypodermics of strychnine for heart failure. The results have been very favorable in his private practice and that of Dr. Harry Pemberton, of Long Branch. In the Manhattan Hospital, the general mortality of pneumonia has been reduced one-half, while in cases coming under treatment before the fifth day the mortality is as 12 per cent. to 17 per cent.; all the cases having been treated by Drs. Daniels, Knickerbocker, and himself, and reported by Dr. A. J. Wittson. Dr. Baruch explained the *rationale* as resting upon the repeated gentle shock and stimulus to the periphery conveyed to the nerve centres, deepening the inspiration and removing obstructions in the bronchi; invigorating the heart by widening the area of the cutaneous vessels. These cases rarely resolve by crisis. While the symptoms subside very soon, they seem to recover slowly but surely.

That precision in the technique is as important in chronic diseases as in the acute may be readily demonstrated. So little is this understood that a certain hydrotherapeutic establishment announces an easy way to prescribe water by presenting the following, to be sent by the physician: "Give bearer a douche, pack, barège bath—the physician may strike out the bath not wanted." One may as well order a patient to obtain quinine, strychnine, or morphia without stating dose, method, and time of administration, etc. A prescription for a "bath" should state temperature, duration, and pressure as well as kind of "bath" wanted. The terms cold, hot, tepid bath should be abolished, and definite temperatures prescribed instead. A cold bath in New York city would be 40° in midwinter, 80° in midsummer.

Dr. Baruch cited phthisis as a disease remarkably amenable to hydriatic treatment, given with judgment and precision; as demonstrated in the Montifiore Home, where a patient may be seen now who has gained thirty-three pounds. A gradual, slow accustoming of the patient to low temperature and high pressure is advisable in order to elevate the patient's nutrition and hematosis.

In neurasthenics, Dr. Baruch finds it important to vary the technique, temperature, and pressure with the type and condition of the patient. A cold douche which would set an erethetic neurasthenic wild would act favorably upon one of the depressed type.

Dr. Baruch cited from the lectures of two eminent neurologists directions for using "the cold-water treatment," in order to warn against their indefiniteness and recklessness, and against the error of regarding the most agreeable bath as the most useful.

He detailed his method in chlorosis to be the standing in water at 100°, and gentle but rapid ablutions of the patient in water at 90°, reduced daily one degree until 60° are reached, followed by drying and friction.

In conclusion, he objected to hydrotherapy being charged with the failures due to an inexact technique and lack of judgment in its application.

Discussion.

Dr. Tyson expressed himself as entirely in accord with the reader's views regarding the life-saving value of the Brand bath in typhoid. He was free to acknowledge that he had not followed the strict technique of Brand, inasmuch as he was under the impression that Brand bathed whenever the temperature reached 102° F. He

had, therefore, in hospital practice bathed his patients every two hours, instead of every three, without harm. Dr. Baruch had informed him, in response to an inquiry if his method was correct, that the objection to these faequent baths was the discomfort produced by them, and that he [Dr. Baruch] preferred to follow strictly the three-hours method, because it had given the best results. Dr. Tyson would therefore in future adopt the strict technique of Brand, which is a great improvement on all other treatments of typhoid. He had found the Burr rubber bath, given in bed, a good substitute for the tub.

DR. HOBART A. HARE said he believed in an exact technique, and commended the reader for insisting upon it. He did not regard the Brand bath as a heat reducing bath, but as a stimulant to the nervous system, as held by the reader. He was not sure but that the fever was salutary in most cases and should not be suppressed too violently. In pneumonia we have increased leucocytosis even if we have a high temperature, and may be the case within the body in typhoid. At all events the use of the coal-tar antipyretics is indefensible, because it has been proved that they diminish oxidation. Cold baths increase metabolism. It has been shown by Liebermeister, Roehirg, and others that the internal temperature rises after cold baths.

DR. TURCK, of Chicago, expressed surprise that the Brand method should require discussion or defense in Philadelphia, where J. C. Wilson has so triumphantly indicated it years ago. He regarded Dr. Baruch's insistance upon making the technique of hydrotherapy exact, as of great importance. Dr. Turck had devised a method of relieving internal congestion by placing the patient into a tub of water at 98°, and gradually raising the temperature until 120° were reached. When the skin was intensely red and the surface vessels well filled, he takes the patient out and rubs him with blocks of ice, dries him, and puts him to bed. He has found this method useful in any disease manifesting internal hyperemia, and has demonstrated its *rationale* in animals by vivisection.

DR. CROZIER GRIFFITH does not regard the cold bath as useful in the broncho-pneumonia of children. He prefers very hot baths and finds these stimulating and effective.

DR. ANDERS said that he values the cold baths in typhoid, but they were objectionable in many respects, and he regretted that there were no substitutes. He had often favored the addition of alcohol to calm the fears of patients and friends, and secure consent to cold baths, if so treated. The Burr bath he regarded as very useful, because it enabled one to lower the temperature gradually and not shock the patient too much. A feeble heart was his greatest contra-indication to the cold bath.

DR. WHARTON SINKLER said that in neurasthenia we have no more valuable remedy than cold water judiciously used. He referred to the dripping sheet as exceedingly valuable for insommia. He had seen a hot bath reduce temperature two degrees.

DR. T. J. MAYS spoke in warm commendation of the ice treatment in pneumonia, and said that the application of ice-bags over the seat of the involved area hastened resolution, removed exudates and acted favorably upon all the symptoms.

DR. BARUCH in closing the discussion thanked the Society for their generous and lenient criticisms. He felt gratified by the cordial reception of the principles he advocated. The reason why the advocates of the bath treatment resent the prominence given to high temperature is that the proper understanding and adoption of the baths have suffered from this bugaboo, viz.: that cold water has always been regarded as an antipyretic. This was illustrated forcibly by a conversation he had with an eminent Berlin professor in 1890, in the wards of the Urban Hospital. His expectation of meeting a warm advocate of the Brand method was rudely shaken when the professor said, "Weg mit der Antipyrese." Because antipyrine was an antipyretic and had proved injurious, and because he classed cold water as an antipyretic, he condemned both with the same anathema. The cold bath reduces temperature but little; its good effect is entirely upon the nervous system. The increase of temperature after cold baths found by Liebermeister is true, but in these experiments very low temperatures were used, far lower than 65° (and in health). Indeed, Liebermeister himself, when teaching in Basle in 1867, applied cold baths in typhoid for temperature reduction, whose continuance he endeavored to maintain by large doses of quinine during the night. But while this was more successful than the medicinal antipyresis by salicylic acid and quinine then in vogue, Liebermeister abandoned his own method for that of Brand, as did most German clinicians. This illustrates clearly, Dr. Baruch said, the importance of always stating temperatures. While a fifteen-minutes bath of 65° F. reduces temperature somewhat, a shorter bath of 55 or less increases it by enhancing oxidation. Dr. Baruch did not share the surprise expressed by Dr. Turck, for he found much room for missionary work to convince the profession that the Brand baths were the best treatment for typhoid fever. When suggesting the cold baths in consultation he is not infrequently met by objection on account of patient's feeble pulse, just as has been objected here to-night. Dr. Baruch desired to emphasize the fact that cold water judiciously applied is the most potent heart tonic we have. There is no better example of asthenia with temporary heart failure than the fainting spell of a woman. The pulse is feeble or absent, respiration shallow, sensation and motion are practically abolished. Do we not dash cold water upon the patient, with the result of stimulating the nerve centres, to which the lungs at once respond by a gasp? the heart's response is shown by returning color to the pallid cheek. Here is a temporary cardiac failure; in typhoid it is prolonged, and due to toxemia. Dr. Baruch presented the following chart giving the summary of a case of typhoid now under his care, showing that without stimulants, heart beating 130 to 140, with a temperature of 104 to 105.6, was kept in good condition, being reduced to 116 to 120 by baths of 76° for twenty minutes with friction. He regarded the report as the best reply to the objections that cold baths are contra-indicated in heart feebleness. This patient

became cyanotic whenever the bath temperature was below 76° F., and yet she had practically no stimulants.

poisoning by arsenic, one does not want long descriptions of cases; a few typical cases will anwser; but if the entire

MRS. G., ÆT. 40.	JANUARY									FEBRUARY.											
	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12
Highest temperature	102	104.4	105.1	105	105	104.6	104.8	104.2	104	103.8	104	103	103	102	102	102	101	101	101	100.6	100.6
Lowest temperature	99	101	103	103	103	102	102	102	103	102	102	102	101	101	101	101	101	100	99	99	98
Highest pulse			130	132	130	130	140	140	128	130	121	124	122	122	118	114	106	106	100	106	94
	(After Baths)																				
Lowest pulse			116	116	116	114	116	120	114	120	110	110	114	108	108	106	104	94	94	94	88
Nourishment			℥15	℥10	℥10	℥17	℥27	℥28	℥34	℥49	℥40	℥44	℥47	℥48	℥56	℥59	℥60	℥48	℥48	℥55	℥45
Water	0	0	0	0	0	0	℥23	℥24	℥27	℥14	℥25	℥13	℥22	℥13	℥14	℥4	℥4	0	℥18	℥16	℥11
Sleep			5½ hr	0 hr	5 hr	5 hr	5¼ hr	5 hr 8½ hr		10 hr	8½ hr	7 hr	7 hr	5½ hr	8 hr	4½ hr	7 hr	8¼ hr	7 hr	5½ hr	9 hr
Stools			4	4	4	8	4	3	6	3	4	5	9	5	0	2	2	2	3	3	4
Urine (mostly lost with stools)			℥17	℥7	℥7	℥7	℥9	℥17	℥34	℥12	℥18½	℥7	℥6	℥12	℥31	℥14	℥19	℥16	℥19	℥18	℥12¼
			76°	70°	70°	70°	80°	78°	80°	80°	80°	80°	80°								
Baths		1	5	5	5	7	6	6	5	6	5	2	1								
		20 m		10 m	12 m	20 m	20 m	20 m	20 m	20 m	20 m	20 m	20 m	20 m							
Stimulants	0	℥1	℥7	℥2½	0	℥½	℥4½	0	0	0	℥1	0	0	0	0	0	0	0	0	0	0

DR. BARUCH desired it to be understood that there are substitutes for the Brand bath. The sheet-bath, for instance, in which successive parts are douched and rubbed until they cease to warm up, is a good substitute. It is only necessary to understand the principles of hydrotherapy and the therapeutic indications of a case to devise a bath that will prove efficient. Dr. Baruch was glad to accept the clinical testimony of Dr. Mays in favor of the ice treatment of pneumonia. But he could not understand how the local external application of ice could exercise so direct an effect upon the subjacent inflamed lung, since he had been told by Dr. H. C. Coe that he had often seen the abdomen almost frozen by cold without producing any effect upon the subjacent peritonitis. The cold-compress method advocated by him seemed more rational and less disturbing to the patient.

REVIEWS.

A SYSTEM OF LEGAL MEDICINE. By ALLEN MCLANE HAMILTON, M.D., and LAWRENCE GODKIN, Esq., assisted by EMINENT COLLABORATORS. In two volumes. Vol. II, 680 pages and index. New York: E. B. Treat & Co.

THE general features of this publication were noticed in the review of the first volume. In this volume a considerable number of topics are discussed. W. R. Hornblower contributes a few pages on the duties and responsibilities of medical experts. The articles, being written by specialists in the respective departments, are, of course, trustworthy and representative of the existing state of the sciences, but there is a general tendency to diffuseness and a want of systematic arrangement in the order in which the articles are printed that leave an unsatisfactory impression on the reader. There is too much detailed case-reporting. In a work of this character the collection of cases from which judgment is to be drawn cannot be too large, but the *data* must be studied out and condensed by the writer of the article, so that those who consult the book may be able to determine easily the inferences to be drawn. Thus, in discussing list of reported cases could be tabulated so as to show the most frequent time of origin of symptoms, and duration, etc., the table would be of great value. We do not think it in good taste that extensive extracts should be made from von Krafft-Ebing's book.

The volume is freely illustrated.

PREGNANCY, LABOR, AND THE PUERPERAL STATE. By EGBERT H. GRANDIN, M.D., Consulting Obstetric Surgeon of the New York Maternity Hospital; and GEORGE W. JARMAN, M.D., Obstetric Surgeon to the New York Maternity Hospital. Illustrated with forty-one photographic plates. Philadelphia: The F. A. Davis Company, Publishers, 1895. Pp. 261.

A COMPANION volume to Obstetric Surgery, by the same authors, this book partakes of the same nature as far as its makeup is concerned. The photographic plates on the whole are excellent, but there are a few that are altogether unnecessary, inasmuch as they fail to impart any knowledge. The book is essentially clinical in its teaching, and in this respect is vastly superior to the Obstetric Surgery, which was largely composed from studies upon the manikin.

It is also eminently practical, the vast amount of theoretic and statistical information being made subordinate to the *facts* as encountered in the management of an ordinary gestation, labor, and puerperism. Only when absolutely necessary are the anatomic, embryologic and pathologic data inserted, and in this respect the book may rightly be regarded as unique. Drs. Grandin and Jarman have undoubtedly presented a useful volume, which will be especially serviceable to students and the more recent graduates in medicine. Unusual care seems to have been expended in the presentation of the mechanism of labor, which, unfortunately, is not as generally understood as it should be for the proper management not only of the abnormal but of the normal labor as well. The care of the infant is also ably discussed, and to a larger extent than is usual in works of this description.

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ORIGINAL ARTICLES.

THE ULTIMATE RESULTS, IN MY OWN EXPERIENCE, OF VAGINAL HYSTERECTOMY FOR CANCER ORIGINATING IN THE CERVIX UTERI.[1]

BY J. E. JANVRIN, M.D.,
OF NEW YORK;
GYNECOLOGIST TO THE NEW YORK SKIN AND CANCER HOSPITAL.

AT a recent meeting of the New York Obstetrical Society the question was raised as to the ultimate good resulting from the complete removal by vaginal hysterectomy of the uterus and appendages in cases in which the cancerous condition had begun in or had involved the cervix uteri; and the statement was made that the results were such as to raise the question as to the propriety of the operation in such cases. I took occasion to say at that meeting that my own results had been such as not only to encourage me, but to fully convince me that the operation was not only justifiable, but absolutely demanded; and I stated (from memory only) that my success had been somewhat over 50 per cent. In the very short paper which is given this evening I wish to give the statistics of my own cases in this *one* class, and to emphasize some points in the technique of the operation which may have had something to do with its success.

I find that during the past twelve years, among my cases of vaginal hysterectomy performed for various conditions, and nearly all of them for malignant disease, I have had sixteen (which constitute about one-fourth of the total number) in which the disease *primarily* involved the cervix.

These cases, for purposes of convenience, have been differentiated as follows: Five in which the cervix alone was involved, four in which the cervix and the upper part of the vagina were involved, and seven in which the cervix and the uterine body were implicated. Of the sixteen cases, twelve were operated upon prior to November, 1892 (Case No. 1 on May 17, 1884, and Case No. 12 on October 21, 1892). From this it will be seen that these twelve cases all date back three and one-fourth years or more. Out of these twelve cases three died within four days succeeding the operation (one from shock and two from septicemia). Of the remaining nine, recurrences of the disease took place in two instances, one dying about one year and four months, and the other about eighteen months, after the operation. Three others were lost sight of after six months or a year, but up to that time had not suffered from relapse. The remaining four, which complete the twelve cases operated upon prior to November, 1892, were all seen and examined at least three and a quarter years subsequent to the operation (some of them at a much later period), and in every case there was absolute exemption from redevelopment. Thus we have $33\frac{1}{3}$ per cent. cures in these twelve cases. In addition to the twelve cases mentioned I can add four of more recent date, as follows: One which occurred twenty-two months since, two last September, and one last October. Of these four cases, three are perfectly well, but in the fourth case (which is one of the two September cases) an unfavorable result was predicted during the operation, and at the present time there are evidences of return in the cicatrices in the vault of the vagina. Of course these four cases are of too recent date to base any statistics upon as to the ultimate result.

The youngest case among the sixteen was 34 years of age, and the oldest 72 years. Two were single, fourteen married or had been married, and nearly all of these fourteen had borne children. The three deaths occurred among my *earlier* cases, and were due to faulty or prolonged manipulations during the operation. If they had been operated upon during the past five years the death-rate would have been decidedly smaller, since I have had no deaths from this operation during that time. A few words as to the *technique* of the operation. I have stated that four of the sixteen cases had involved a certain portion of the vaginal mucous membrane as well as the cervix, and it is especially to these cases and the method used for the thorough removal of the diseased condition, together with a certain amount of healthy adjacent tissue, that these remarks apply. In a paper bearing the title "The Limitations for Vaginal Hysterectomy in Malignant Diseases of the Uterus," which I read at the

[1] A portion of An Inaugural Address of the President of the New York County Medical Association, delivered on February 17, 1896.

eighth annual meeting of the Fifth District Branch of the New York Medical Association, in Brooklyn, May 24, 1892, and which was published in the New York *Medical Record*, July 9, 1892, I spoke of certain cases in which the disease had extended from the cervix downward upon the mucous covering of the vagina, and I quote from that paper the following: "This condition is generally brought about simply by attrition. The epitheliomatous disease of the cervix coming in direct contact with the mucous surface of the upper part of the vagina simply irritates at first, but gradually, as the membrane becomes denuded, the poison becomes absorbed by it, and a focus for extension is added to the case. Fortunately for quite a time, in most cases, the conservative resources of nature are called into play, and a deposit of healthy, newly formed connective-tissue proliferation takes place in the vaginal wall, thus separating it from glandular and cellular structures beyond. In such cases an examination will show an extension of the disease to the mucous surfaces simply, the vaginal wall slightly, if at all, thickened, and no cancerous infiltration whatever under the wall, the vagina in all respects, excepting as to its mucous membrane, being practically normal. This condition does not in any way contra-indicate the operation. It simply complicates it by necessitating the removal of that portion of the vaginal wall upon which the disease has started, together with a half-inch or more of the healthy tissue below. This is best done by making the circular incision through the vaginal wall at a proper point at the beginning of the operation, dissecting upward and ligating any vessels which may cause sufficient bleeding to require it, and then as you reach the outer border of the cervix go on in the usual manner and extirpate the uterus." At that date I had had two such cases—one of three *years*' and one of three *months*' standing. Very shortly after reading the foregoing extract I had another. These three cases now date back as follows: No. 1, nearly seven years; No. 2, four years; and No. 3, three years and four months. These patients are perfectly well at the present time. No. 4 was operated upon in September last, and, as previously stated in the early part of this paper, an unfavorable prognosis was given at the time of the operation, from the fact that during the operation it became evident that the disease, although not infiltrated beyond the vaginal mucous membrane, had developed so deeply into the right broad ligament as to probably render *total* extirpation of all its *foci* an impossibility.

In operating upon these cases in which the vaginal mucous membrane had become involved I found it best in two instances to do a preliminary curettage, cleaning away all necrotic or loose tissue with the sharp curette, and then treating the case locally by the application of dry iodoform gauze every second day for a week or ten days, thus rendering the parts as aseptic as possible before extirpation was done.

I would like to add a few words as to another point bearing upon the thoroughness of the operation itself, and that is considering the amount of the broad ligaments which can be removed by the vaginal route. There are a certain number of cases in which there exists a thickening of the broad ligaments frequently associated with contraction in one or both, and resulting in more or less fixation of the uterus. Of course such a condition, if malignant, may occur in *any* case of malignant disease of the uterus, but much more frequently, I believe, in cases in which the carcinoma has extended to the uterine body, or has had its origin there, than in cases in which the cervix, or the cervix and the vaginal mucous membrane, have furnished the starting-point. In such cases the point to decide, if possible, is this: Is it the result of an old inflammatory trouble or a true infiltration of cancerous deposit? If the former, vaginal hysterectomy is eminently proper. If the latter, vaginal hysterectomy is hardly justifiable; and it is questionable whether the abdominal method will furnish better results.

These cases are extremely hard to differentiate, but when coming in contact with them it has been my custom to operate upon all such as gave a history of former pelvic inflammation, and who were not suffering from the ordinary cancerous cachexia. It is a matter of surprise sometimes as to the thoroughness of the removal of the broad ligaments in these cases by the vaginal route, if we combine the use of the hemostatic forceps with the ligature in cases in which there is great difficulty in controlling the hemorrhage by ligatures alone.

My results in such cases have been sufficiently good to warrant a continuance of operative work in the same direction. It may be that the combined abdominal and vaginal method, as described by Dr. J. H. Clark, resident gynecologist at the Johns Hopkins Hospital, in the July and August (1895) numbers of its *Bulletin*, in which the broad ligaments are very thoroughly removed, will give better results than the vaginal method. I shall be glad to hear the ultimate results of cases operated upon by this method.

In this short *résumé* of my cases I have confined my remarks (with the exception of the one digression just read) to the *ultimate results* in cases in which the disease, as far as could be determined, *began* in the cervix uteri; these cases, as before stated, being but a limited number as compared with all my cases of vaginal hysterectomy for malignant disease. Before closing it might be well to add that in all my cases of vaginal hysterectomy the ureters have escaped injury. In two cases I have had vesico-vaginal fistulæ follow. In one of these the fistula was sewed up some five months after the removal of the uterus, and the patient is in perfect health to-day. The other case, a hospital patient, was one of the three mentioned as having been lost sight of. These statistics, although giving 33⅓ per cent. ultimate success, would have been better still had it not been that my entire death-rate from this operation performed for various conditions during the past twelve years is confined to the three cases among my twelve earlier operations; and these cases happen to belong to the class dealt with in this paper. As stated earlier in the paper I attribute them to faulty technique, prolonged manipulation, and inexperience in performing the operation as far back as tenor twelve years ago.

SCURVY IN INFANTS. WITH REPORT OF A CASE.[1]

By WM. FITCH CHENEY, M.D.,

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SCURVY is a disease that has been recognized and described since very early times. Soldiers in the army of the Roman Empire suffered from its ravages; and sailors that crossed the Atlantic in the wake of Columbus fell victims to this scourge. In the army and navy of England and the United States, scurvy was for many years responsible for great loss of life, decimating garrisons and rendering long sea-voyages almost impossible. After several centuries of such sacrifice, investigators at last found that the disease was invariably due to a deficiency or absolute lack of fresh vegetable food; also that in lemon juice there existed a simple means, not only of preventing the disorder, but of checking it when it appeared. Following these discoveries, scurvy became so rare that it is now a curiosity in the practice of medicine, with which the majority of physicians never meet.

[1] Read before the San Francisco Medico-Chirurgical Society.

But strangely enough this disorder is within the last decade again coming prominently into notice; and most strange of all, it now makes its appearance, not in soldiers or in sailors, but in babies; not in the camp or on the sea, but in the nursery of homes where no deprivation exists, but plenty and even luxury are found. I have said it now makes its appearance, but I should rather say it is now being recognized; for there is no doubt that many infants have in the past been allowed to die who were suffering from scurvy, but treated for some disorder with which they were never afflicted. That infants do have scurvy was first brought to the notice of the profession by Dr. W. B. Cheadle, of the Great Ormond Street Hospital for Sick Children, London. He first called attention to the fact in a paper published in the *Lancet* in 1878. At various times since then he has continued to report cases, and by his writings other investigators have likewise had their eyes opened to the truth. There is no doubt now that scurvy does occur in infants; that it is due here to the same causes that bring it about in adults; that it presents the same group of symptoms, and that it is susceptible of cure by the same treatment. No textbook on the diseases of children ever mentioned it before the present decade; but in the recent textbooks and in medical journals articles are now freely devoted to its consideration.

Etiology.—What causes this disease in infants? Exactly the same factor that figures in the scurvy of adults, viz., *deprivation of fresh food.* Infants nursed at the breast do not have scurvy; it is a disease peculiar to infants artificially fed. But neither do infants fed upon a proper preparation of cows' milk present symptoms of scurvy, for cows' milk, when fresh, possesses, like human milk, antiscorbutic properties. It is when milk has been long subjected to high temperature, as in sterilization or in condensation, that it loses this antiscorbutic property and becomes no longer fresh. Most fertile, however, of all foods in the production of scurvy in infants are the patent proprietary preparations that are bottled or canned and stand on the shelf for months before they are administered. They are stale, they lack in nutritious properties, and the sailor in Arctic seas or the soldier in garrison fed exclusively on canned meats and hardtack is no more liable to scurvy than the baby fed exclusively on these proprietary foods. It is suggestive, too, that scurvy most frequently occurs in the first eighteen months of life. During the first year, food of but one kind is usually given, and if that kind is bad,

the nutrition is bound to suffer, but after the first year the diet begins to be varied, so that from some of its food the infant receives the needed antiscorbutic elements. Hence the rarity of scurvy in infants over eighteen months of age.

Symptoms.—An infant with scurvy is usually pale and anemic, more or less emaciated, and cross and fretful in disposition. Such symptoms, however, only mean that the nutrition is poor, and are in no way peculiar to scurvy. But there is a group of symptoms that are characteristic—so much so that any one of them creates suspicion of scurvy, and occurring together they render the diagnosis positive.

1. The most peculiar manifestation of the disease is fusiform or cylindrical swelling of one or both thighs. The swelling is evidently painful to the infant when touched or examined, and the limb lies flexed and abducted, or straight and helpless. This condition is due in scurvy to a subperiosteal hemorrhage about the shaft of the femur. The enlargement usually extends from hip to knee, but is greatest about the centre of the thigh. It sometimes involves as well the upper part of the leg, below the knee, but is always less marked there. The superficial tissues of the limb are apt to be edematous, but, owing to the depth of the blood effusion, fluctuation cannot be detected, nor is there discoloration of the surface. This is the symptom that the mother will probably notice first. She observes that her baby cries and frets when it is bathed, or has its napkin changed, and, in searching for a cause of the unusual sensitiveness, happens upon the enlargement of the limb.

2. Another characteristic feature of scurvy is the condition of the gums. If the infant has teeth, the gums will be found swollen, spongy, dark purple in color, bleeding freely on touch, or perhaps covered with dry blood. Such an appearance is so striking that it can scarcely fail to attract the attention of the mother or nurse, and when seen by the physician who knows the symptoms of scurvy, it should make him very suspicious of the presence of that disease. But this condition does not show itself in the infant before the teeth have appeared. The gums then are found entirely normal, or at most display here and there a few ecchymotic spots. It is important to remember that in an infant with no teeth the characteristic spongy gums are not, as a rule, present; forgetting this, one might be led astray on diagnosis by the absence of this peculiar symptom, even though other symptoms of scurvy were plainly present.

3. Equally striking is the occurrence, in a baby too young to have possibly been indulging in fighting, of a typical "black eye." The mother one day notices that there is a dark circle around her infant's eye, as if some one had struck it and made a "black and blue" mark. This gradually fades away and disappears, but the peculiarity may show itself in a few days in the other eye, or may recur in the same eye at varying intervals. It is due to a subcutaneous hemorrhage into the tissues about the eye. This sympton is so strange that if it does not alarm the mother enough to make her summon a physician at once, it will nevertheless impress her so deeply that she will not fail to recall it when asked about the matter. A "black eye" coming on in an infant without traumatism, and perhaps repeated several times, can rarely be due to anything else but scurvy.

These are the most typical and characteristic symptoms of scurvy in infants, but there are others that must be borne in mind. The tendency throughout the disease is to hemorrhage; and this same tendency, that leads to the effusion of blood beneath the periosteum of the long bones, or into the tissues around the orbit, leads also to other manifestations, less frequent, but fully as significant when they do occur. Thus, the hemorrhage may take place into the muscles, causing circumscribed painful indurations; or beneath the skin, causing black and blue spots that look like bruises; or into mucous membranes, giving rise to epistaxis, or blood in the urine, stools or vomited matter. Hematuria may be the only symptom that attracts the notice of the mother and leads her to seek advice, as in a case reported by Cheadle.

Diagnosis.—The disease in question has been most often mistaken for rickets; in fact there are often symptoms of rickets present with those of scurvy, since both are caused by improper feeding. But no rickety child or any other will have scurvy, unless its blood lacks the antiscorbutic principle supplied by fresh food. Emaciation, anemia, fretfulness and irritability, and disinclination to be moved or handled are symptoms as much associated with one disease as the other; and with scurvy there may even coexist beading of the ends of the ribs, enlargement of the epiphyses at wrists and ankles, and the square-shaped head that are charateristic of rachitis. Yet rachitis does not give rise to swellings of the shafts of the long bones, or to spongy gums or to sub-

cutaneous or submucous hemorrhages. It should always be possible, therefore, on close examination, to distinguish between the two diseases.

The swelling and tenderness of a limb accompanying scurvy make one think of acute rheumatism; and histories are not lacking of cases treated for days with salicylate of sodium before a correct diagnosis was at last established. This mistake can arise only from superficial examination, overlooking other conditions of the infant than those present in the limb; and even if the swollen and tender limb were the only symptoms present, there would be lacking the redness of the surface and the elevation of temperature that accompany acute rheumatism.

The disinclination or positive inability to move the affected limb in scurvy has led to the mistake of diagnosing infantile paralysis. But besides the fact that in the scorbutic dyscrasia there are other manifestations besides the condition of the limb, the hyperesthesia of the member and the normal knee-jerk should exclude the diagnosis of infantile paralysis.

Finally, the swollen limb of scurvy has been mistaken for some distinctly local affection, such as periostitis, abscess of the hip or knee, or sarcoma. Dr. L. Emmet Holt, of New York, has reported a case of infantile scurvy, diagnosed as sarcoma by several surgeons, because of a large swelling about the knee; the autopsy showed no sarcoma, but very extensive hemorrhage and epiphyseal separation at the lower end of the femur.

The subcutaneous and submucous hemorrhages noted in scurvy occur also in several other affections, as hemophilia, leukemia, purpura hemorrhagica and erythema nodosum, all of which appear at times in infants and must be remembered in making a differential diagnosis.

In general, most of the failures to properly diagnose scurvy in infants have come from the lack of knowledge that such a disease exists. It has never been clearly brought out until the past ten years, that babies are subject to a distinct disease corresponding to the scurvy of adults. When this fact is more generally recognized by the profession, fewer mistakes in diagnosis will be made.

Prognosis.—The prospect is most brilliant when once the condition is recognized; for while scurvy left untreated is frequently a fatal disease, yet even in the worst cases the response to proper treatment is immediate. As Dr. W. P. Northrup says: "There are two things in a physician's work which may well call out the word 'miracle': one is intubation and instant relief from suffocation, another is scurvy's cure."

Treatment.—The treatment is specific and yet it includes no drugs. It comprises two simple remedies: fresh cow's milk for food and fresh orange-juice. The stale food must be replaced by fresh-milk, modified or not with some diluent, according to the age and condition of the infant. The orange-juice can be given in teaspoonful to tablespoonful doses, three times a day. It is sometimes advisable to add to the diet fresh beef juice, prepared by heating thoroughly a piece of steak and then squeezing out its juice with a lemon-squeezer. No medicine is necessary. The swollen limb as a rule needs no treatment whatever; but if the condition has advanced to separation of epiphysis from diaphysis, the limb should be put up in splints to prevent deformity. The swelling of the gums usually subsides quickly under the administration of milk and orange-juice, but the bleeding from them may require some astringent application, such as the glycerite of tannin.

In conclusion, the following case is reported as typical of the disease in question, both in its clinical history and in its prompt response to treatment. It is also, so far as I can find from the literature on the subject, the first case to be reported from the Pacific Coast: Olive N., female, aged 10 months, was first brought to the Children's Clinic of Cooper Medical College on July 31, 1895. The mother had noticed enlargement of the right thigh; that the digestion was very poor; that the heart seemed to beat too rapidly; that the skin about the left eye had swelled on two occasions recently and turned darker colored, like a "black eye"; that the baby had nose-bleed once recently, and some bleeding of the gums. The enlargement of the thigh was first noticed about three weeks previous, and had gradually increased since. The discoloration about the eye was first noticed about July 17th, and the second occurrence about July 24th. The mother reported further that the baby's appetite was poor; that instead of sleeping, she whined and cried all night, but seemed easier in the daytime; that the discharges from the bowels were acid and very irritating to the buttocks, generally too frequent, and always fluid, and that the disposition was always peevish and fretful. There was a history of artificial feeding from birth. Many foods had been tried in succession, none seeming to digest well. Since November, 1894, malted milk had been used continuously, with a little better result. The mother prepared this

food by adding three teaspoonfuls of Horlick's malted milk to eight tablespoonfuls of water. The baby had just cut her first tooth at ten months, and had never yet made any attempt to stand on her feet. Both parents were living and well. There were three older children living, all well. One child had died of cerebral trouble, and had a history of bow-legs, straightened by operation at two years of age.

Physical examination showed that the infant was pale, poorly nourished, cachectic, the left eye protuberant; complexion fair, eyes blue, hair light, the body much emaciated. There was slight enlargement of the post-cervical glands, a marked rachitic rosary, box-shaped chest, and widely open anterior fontanel. Several small spots of ecchymosis were observed on the gum of the lower jaw on the left side. There was swelling of the right thigh from hip to knee, greatest about the middle, with slight enlargement also below the knee, in the upper third of the leg. The skin over the swelling was very tense, and no fluctuation could be made out. Some pitting of the subcutaneous tissues was observed on pressure. There was no redness of the surface or increased heat in the part, but the limb was apparently painful when handled. The infant made no effort to move the member. The greatest circumferenee of the right thigh was $9\frac{1}{2}$ inches; of the left thigh, 7 inches. Percussion and auscultation showed heart and lungs normal.

The mother was instructed to drop the malted milk entirely, and feed the baby instead equal parts of cow's milk and oatmeal water. The cow's milk was to be allowed to stand for three or four hours, and only the cream and top milk used. The oatmeal water was to be made by boiling for one hour three teaspoonfuls of oatmeal in a quart of water. Of this mixture, four ounces were to be given every two hours. In addition, the baby was to receive one tablespoonful of fresh orange-juice three times a day.

August 3d.—The mother reported that the child had taken the food as directed, regularly and without difficulty. The appetite was much improved. The ecchymosis of the gums, and protrusion of the left eye had entirely disappeared. The swelling below the right knee was markedly diminished, but not noticeably above. The mother was instructed to make the proportions of the food two-thirds top-milk and one-third oatmeal water, and to increase the amount to five ounces at each feeding. The orange-juice was ordered continued.

August 7th.—The infant was reported suffering from constipation, and did not seem to take her food quite so readily as formerly. The interval between feeding was therefore increased to two and a half hours and more cream added to the food. One teaspoonful of fresh beef-juice was ordered with each feeding. If the bowels did not move daily, they were to be relieved by use of the soap-stick. The thigh at this visit was found to measure but 9 inches in circumference.

August 10th.—The baby was much improved, no longer constipated, and with good appetite. The limb was still further decreased in size, measuring only $8\frac{1}{2}$ inches. The food and orange juice were ordered continued as before, except that the beef-juice was to be given only with each alternate feeding.

August 14th.—Continued improvement in all respects was noted. The amount of food was increased to six ounces at each feeding and the interval to three hours. The beef-juice was dropped to one teaspoonful three times a day.

August 17th.—All the general conditions were noted as still improving, the appetite good, the bowels regular and passages well digested, the color better and a perceptible gain in flesh. The tumefaction of the thigh was still receding, and the greatest circumference measured but eight inches.

August 31st.—The infant could now move the affected limb quite freely, and apparently suffered no pain on motion or on handling of it. The greatest measurement was but $7\frac{3}{4}$ inches.

September 18th.—The limb was apparently the same size as the other, and the infant well in all respects and thriving. The orange-juice and beef-juice were discontinued entirely, and the food increased to seven ounces every three hours.

November 20th.—The infant was brought back to the clinic for an acute eczema, but with this exception was entirely well. It had none of the symptoms of scurvy, was rosy and well-nourished and in the best of spirits. Both thighs were the same in size, eaeh measuring just eight inches. The infant was beginning to stand on its feet, and gave every promise of soon learning to walk.

906 Polk St.

Dr. Baxter T. Smelzer, secretary of the State Board of Health, has been investigating into the epidemic of typhoid fever at Elmira. He finds that the water of Chemung river, which is used in the city, is polluted by the sewage of Corning, Hornellsville, and Bath. Ice taken from the river at Elmira was found to be filled with bacteria.

THE AMBULATORY TREATMENT OF POTT'S DISEASE.

BY ROBERT W. LOVETT, M.D.,
OF BOSTON.

POTT'S DISEASE is in itself only a tuberculous destruction of the anterior part of the bodies of the vertebræ. No deformity is necessarily attendant upon its occurrence, and the antero-posterior curvature of the spine, with which we always associate it, is really the result of the erect position. It is said that this deformity does not occur in quadrupeds.

The present paper is an attempt to formulate certain problems which are met in the treatment of this affection by ambulatory means. When a surgeon, in starting to treat a case of Pott's disease by ambulatory methods, selects the force of gravity as his antagonist, rather than as his assistant, it is proper that he should appreciate the problem which he is undertaking and understand clearly the mechanical aspect of the case. Instead of keeping the patient with Pott's disease in bed, if the surgeon allows him to go about, so that the heavy weight of the body comes upon the diseased segment of the vertebral column, the surgeon should know pretty definitely whether this is a matter that he can counteract by apparatus, or whether all mechanical support to the spine is not necessarily imperfect. The question is this: Can the spine be placed in as favorable a condition for recovery as during recumbency, and what is the mechanical value of the methods of ambulatory treatment now in use?

To consider, for example, a case of dorsal Pott's disease in a boy weighing forty pounds, where the disease is located in the lower dorsal vertebræ, say the ninth, tenth, and eleventh. It is manifest that, inasmuch as the vertebral column bears all the body weight, and as the vertebral column is normally convex backward in the dorsal region, the weight of the body above the disease must needs be transmitted through the bodies of the dorsal vertebræ. This weight is the weight of the segment of the body above the diseased vertebræ. It includes the head, with the brain, the neck and its firm muscles, the shoulder girdle, from which hang the arms, which are of no little weight, and the upper part of the chest, with the contained organs. There is no support in front. These organs are hung simply from the backbone, from which the chest girdle runs out just as a crossbar does from a telegraph pole. It is not a bad estimate, I think, to place the weight of these organs which I have just mentioned as half the body weight—in this case twenty pounds. We will assume, then, that the problem in this especial case is to modify, if possible, the pressure which comes from this weight upon the diseased vertebræ, and that this pressure is the result of a twenty-pound superincumbent weight.

The problem which efficient mechanical support must solve is to remove or lessen the weight coming upon the diseased bodies of the vertebræ. The antero-posterior brace attempts to do this by acting as a lever which shall transfer the weight to the articular and transverse processes by pushing against the deformity as a fulcrum. In other words, it should modify intervertebral pressure. It is upon this theory that the brace was constructed and should be used.

The model which is presented is a very imperfect affair, but one which makes very clear some of the intrinsic difficulties met with in the treatment of Pott's disease. This model was made as follows: A plaster jacket was applied to a patient and removed. After removal, the jacket was bandaged together and filled with plaster-of-paris paste, which hardened into a rough cast of the trunk. This cast was sawed in halves transversely, and by putting in some blocks of wood at the back to represent the vertebræ *H*—if these two halves are placed as shown in the picture, the conditions of a case of mid-dorsal Pott's disease—are fairly well represented (1). A Taylor back brace is applied by being bandaged to the lower segment and running up just as it would in the case of a patient. It is made to exert force at

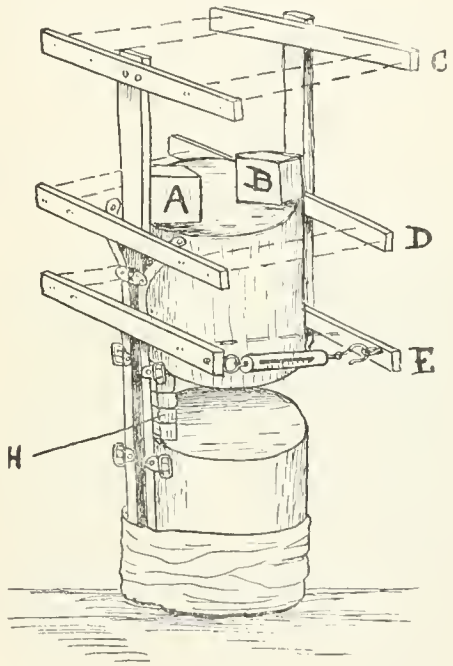

FIG. 1.

the point represented by the blocks of wood just as it would press forward upon the deformity. The upper part of the brace is bandaged to the top segment. These two segments of plaster represent the two segments of the body above and below the disease, and the problem is to determine what force must be applied by the brace to keep these segments in place. This would correspond to the force required to modify the intervertebral pressure, and this modification of the intervertebral pressure should be what the surgeon should strive to accomplish in all cases of Pott's disease treated by this brace.

The criticism may be made that this model does not reproduce the muscles. The only muscles which come in question are the intrinsic muscles of the spine, and those work to such a very great disadvantage in comparison with the leverage that the weight obtains, that they may be disregarded as of practically little importance. They could have been represented by rubber cords running along the back of this model, but it is evident that such apparatus would have very little practical influence upon the experiment. The posterior muscles of the trunk may tilt the body backward, as often happens, but this acts only to bring the superincumbent weight further back, and will be discussed later.

The upper part of this model weighs ten pounds, and a ten-pound weight is attached to it, which represents fairly well the conditions in a case of dorsal disease in a boy weighing forty pounds. An arm runs out from the back brace and other arms run out from the front of the upper part of the model. These are connected by spring balances, which show how much pressure is required at different levels. They show how much force will be required to hold the upper part of the model back.

Three things can be demonstrated by this model: (1) If the chest is firmly held, and the pelvis is held with equal firmness, the pressure coming upon the spine over the disease, in case the brace were used to modify intervertebral pressure, would be so great that no skin would be able to stand it. If the finger is placed between the back brace and the wooden blocks in the model which represent the diseased column, it will be found that even when the upper segment only weighs twenty pounds the pressure cannot be borne. It simply demonstrates the necessarily incomplete action of the brace, for if it were possible for the pelvis and chest to be held as firmly to the brace in the living subject as in this model, the skin would not be able to stand the pressure. It is obvious that the pelvis and chest cannot be held as firmly as in this model. (2) The position of the superincumbent weight is a most important matter. If the ten-pound weight is placed at *A*, that is as far back as possible, the spring balance at *D* registers ten pounds. If, however, the weight is placed at the forward part of the model, *B*, the balance registers nearly twenty pounds, demonstrating that the position of the superincumbent weight (that is, of the head and shoulders) is a most important matter in determining the amount of weight to come upon the diseased vertebræ. Therefore, if the head and shoulders are held as far back as possible in this way, it requires much less pressure to make the brace efficient than when the head and shoulders droop forward. (3) The level at which the backward pull is applied is a most important matter. In this experiment the spring balances are adjusted at the level of the axillæ, *D*, and the transverse pull is made practically at the level where would come the highest transverse straps of the apron. If the pull is made at a lower level in the model *E*, so great an amount of force is required to hold the upper part of the model in place that it cannot be registered by the balances in use. If the two arms are prolonged up to what would perhaps be the level of the middle of the face, *C*, much less force is required to hold the upper segment of the model in place than when pressure is made backward at the axillary line; that is, the higher the backward pressure is applied the less force is required to hold the upper part of the model in place.

This model is not presented as an accurate reproduction of the mechanical conditions in Pott's disease, but to demonstrate certain obvious facts.

The practical application of this experiment is as follows: In the living subject it is not possible to obtain a sufficiently firm hold upon the chest and pelvis. If it were, the skin over the deformity would not be able to stand the force required to modify intervertebral pressure. The Taylor back brace as ordinarily applied exerts no backward pull above the axillary line, where a very great force would be required to pull the upper segment of the body backward (Fig. 2). The chest piece of Dr. Taylor, which applies backward pressure in the fossæ under the clavicles, is in the right direction. The apparatus of Dr. Whitman (Fig. 3), which makes pressure upon the anterior part of the shoulders, is also in the right direction, but incomplete and incapable of exerting proper pressure. If a firm hold could be obtained upon the chest, a brace would be able to accomplish much more

than is found to be the case now. The chest piece used by the writer, which is practically an anterior brace to the chest, is shown in the diagram. It is an effort in the direction of obtaining this hold upon the chest, and is partly satisfactory.

Fig. 2.

With regard to the mechanical efficiency of the plaster-of-paris jacket in Pott's disease, a different method of experiment was undertaken. If the plaster jacket diminishes the deformity, or extends the spine when applied, it must necessarily cause lengthening of the body. If the plaster jacket can accomplish as much, or nearly as much as is done by having the child lie on its back, the length of the child should be as much after the application of the plaster jacket, as when lying down. Some preliminary experiments were made with regard to the effect of recumbency in increasing the length of children with Pott's disease. (1) A boy with lumbar deformity was one-quarter of an inch longer when lying down. (2) A girl with dorsal deformity was one-half of an inch longer when lying down. (3) A girl with lumbar deformity was one-quarter of an inch longer when lying down. (4) A girl with acute dorsal disease was seven-eighths of an inch longer when lying down. (5) A girl with high dorsal disease was seven-eighths of an inch longer when lying down.

These experiments show that a child with Pott's disease is from one-quarter to seven-eighths of an inch longer in recumbency than in standing. This difference can be accounted for by the change in the curves of the spine.

An experiment was then undertaken to see if the plaster jacket caused lengthening of the child, and if so, under what circumstances. (1) Jacket applied by suspension. The immediate effect was an increase in the length of the child five-eighths of an inch over the standing position, but at the end of twenty minutes the child had shortened three-eighths of an inch, and at the end of thirty minutes was back to one-eighth of an inch of the height when standing with no apparatus. In other words, the application of a plaster jacket lengthened the child only one-eighth of an inch. It may be mentioned incidentally that the child when lying on its back was one-half of an inch longer than when it was standing up with a properly applied plaster jacket. (2) A jacket was applied to a child, with the effect of immediately lengthening it over the standing position. At the end of twenty minutes, the child was at the same height as when standing without the jacket on, and was seven-eighths of an inch shorter than when lying on the back in bed. The jacket was

Fig. 3.

applied by suspension. (3) A jacket was applied by the hammock method: Standing without support, 3 feet $2\frac{3}{4}$ inches; ten minutes after application of jacket, 3 feet $2\frac{3}{4}$ inches; twenty minutes after application of jacket, 3 feet $2\frac{1}{2}$ inches. (4) Jacket applied by the hammock: Standing with-

out jacket, height 3 feet $4\frac{5}{8}$ inches; immediately after application of jacket, 3 feet $4\frac{3}{4}$ inches; ten minutes after application of jacket, 3 feet $4\frac{5}{8}$ inches.

In no one of the four experiments was the child substantially longer after the careful application of the jacket than when standing unsupported, and in no case as long as when lying down without apparatus. The column is longest and the spine consequently straightest when the child is suspended or has traction applied in bed to the legs and head. A boy with mid-dorsal disease, not very acute, was an inch longer in bed with traction than when he stood up. A girl with high dorsal disease and paralysis was lengthened three-eighths of an inch by traction over her length when lying quietly in bed. The spine is in its second best position when the child lies in bed without traction. The spine is shortest, and consequently in its worst position when standing, and the application of a jacket has not, in any case observed by the writer, been found to produce any permanent increase in height, except in one case where it lengthened the child one-eighth of an inch over the position without a jacket. The same may be said of the application of the antero-posterior brace. Recumbency, on the other hand, does produce such an increase in length. To the writer's mind, the case is clear. Recumbency with traction is the best available treatment if we regard only the position of the spine. Simple recumbency is the next best. Treatment by ambulatory measures is the worst. These are demonstrated by the length of the child under these various conditions.

Recumbency: With regard to the treatment by recumbency I am as far as any one from wishing to advocate unnecessary recumbency, but I wish to go on record as advocating, in general, during the acute stage of Pott's disease, recumbency on a frame for the greater part of the time, varied by short periods of going about protected by the most available brace or jacket. During the painful stage I believe that recumbency should be continuous. The beneficial effect of recumbency must be familiar to every orthopedic surgeon, who must often notice the improved appetite, the increase in flesh, and the diminished fever, when a child with acute Pott's disease is put to bed.

In the use of apparatus it should be remembered that it is all necessarily imperfect from a mechanical point of view, and does not afford complete support, and that traumatism to the spine must result from the use of the jacket or the brace. The more complete and efficient the apparatus, the less the traumatism.

Such are the scattered facts that I have brought together for your attention. Pott's disease, it seems to me, is a very grave affection, and in advocating its treatment by recumbency, rather than by ambulatory measures, during the acute stage, I am speaking of what I believe to be the very best treatment. Other modes of treatment are no doubt excellent, but when one wishes to secure the very best result, it seems to me that, having recognized that apparatus is intrinsically imperfect, and necessarily so, to accomplish the purpose for which it is intended, it is incumbent upon the surgeon either to insist upon this treatment by recumbency or to transfer the responsibility of ambulatory treatment to the parents. The use of apparatus, it seems to me, should be during the acute stage, to vary the monotony of recumbency. That recumbency should be carried out by having the child lie upon its back upon a frame. The addition of traction to the legs and head I believe to be of benefit, and that it hastens recovery by quieting muscular spasm and improving the position of the spine. I believe that it should be used in all cases of paralysis due to Pott's disease.

With regard to apparatus, whether we use it in the way that I have advocated or as the sole means of treatment, it seems to me that we should remember that apparatus is necessarily mechanically inefficient to solve the problem which it undertakes. If apparatus is used these points should be remembered: the position of the superincumbent weight should be as far back as possible; and the higher the backward pull comes, whether a jacket or a brace is used, the less force is required.

Whether we wish to follow the best treatment or not may be a question, but it is the writer's belief that treatment by recumbency, so prevalent in the early days of orthopedic surgery, will come again to the front if the real value of supporting apparatus is studied.

THE DIAGNOSIS OF GASTRIC CARCINOMA.[1]

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Carcinoma of the stomach usually occurs after the age of 35, although it may occur before; indeed, it has been recorded in infancy. Heredity is not as important a factor in diagnosis as was formerly taught. In some parts of the coun-

[1] Read before the Surgical Section of the Buffalo Academy of Medicine, January 7, 1896.

try carcinoma is more commonly seen than in others, and Roswell Park has remarked upon the frequency of its occurrence in the vicinity of western New York. Sex does not seem to have much influence upon the frequency of carcinoma.

The history of the illness should be carefully considered, for it is difficult to determine just when the disease commences, the early symptoms depending in a measure upon the location of the neoplasm. If it arises at the cardia, symptoms pointing toward obstruction at that point may develop very gradually. Some trouble in swallowing may be experienced. A few mouthfuls of food are swallowed and then the patient feels a vague distress beneath the sternum which is accompanied or followed by regurgitation of food. Pain may be present, but is not constant as is ordinarily supposed. In case the fundus of the stomach is the seat of an extensive infiltration which gradually leads to thickening and contraction, the early symptoms may consist of distress after eating, amounting in some cases to severe pain; or nausea and vomiting may occur after small quantities of food have been eaten; the capacity of the stomach in these cases steadily diminishes, and a few ounces of food serve to tax it quite fully. The symptoms and physical signs of carcinoma in this location differ markedly from those of carcinoma of the pylorus. The diagnosis in some instances is very difficult, as there may be no symptoms referable to the stomach. In those cases having the disease situated at the pylorus the early events usually indicate ischiochymia. Constipation is noticed, and at long intervals copious vomiting occurs. Food stagnation manifests itself by the appearance of substances in the vomitus that were eaten one or more days before. Marked gastric discomfort or actual pain, accompanied by nausea, usually preceeds these vomiting spells, and immediate relief is experienced as soon as some of the stomach contents are expelled. As a rule only a portion of the contents is vomited, it being a rare occurrence for the stomach to be thoroughly emptied in this condition by the act of vomiting.

At first these attacks happen only once in one or more months, but they occur more frequently as time passes and the pyloric stenosis increases, until finally food is rejected after every meal, perhaps, or vomiting occurs regardless of eating.

The time elapsing between the earliest and the latest manifestations of malignant disease of the stomach depends somewhat upon its location. When it is situated so as to interfere with the onward passage of food from the esophagus through the stomach and into the duodenum, loss of flesh and strength makes rapid strides, and a few months may suffice for the appearance of great emaciation and profound debility. This is true because the intestine does not receive the food, and the body is deprived of the manifest advantages of intestinal digestion: the consequent inanition is practically the result of starvation.

In cases with diffuse carcinoma of the fundus, diminishing the capacity of the stomach, but not offering any obstruction to the entrance of food into the intestine, loss of weight may be very gradual, and a fair amount of strength is maintained for a considerable period. The natural resisting power of the patient is an important factor in determining the length of time he will live, as is also the existence or absence of malignant disease of organs apart from the stomach.

The cachexia is not characteristic; it is not different from that occurring in other exhausting affections, nor is it an invariable occurrence. It may appear early and be very marked, but, on the other hand, it may not be noticeable until very late in the disease. All the symptoms are usually progressive.

Among the symptoms mentioned above will be those accompanying the general debility, such as weak pulse, pallor, dry, harsh skin, hyperlithuria, periodic albuminuria, or indicanuria. Sometimes a few hyaline casts are found in the urine. The urea excretion is low, but no more so than is the result of starvation, emaciation, and lowered vitality. The skin may assume an icteric hue, owing, perhaps, in some instances, to blood changes as well as to slight biliary obstruction. Most commonly, however, hepatic jaundice results when the disease involves, by extension, the biliary passages or embarrasses them by pressure.

Examination of the blood shows early a chlorosis, and later the red blood-corpuscles are reduced. Sometimes the red cells fall as low as 1,000,000 per cubic millimeter, and many megalocytes, microcytes, and macrocytes are seen. Normoblasts are also present in some cases. No leucocytosis is observed unless inflammation or ulceration takes place.

By physical examination it is not always possible to detect tumors involving the stomach. The cardia may be seriously affected and no tumor be discernible—the fundus may be thoroughly infiltrated, and yet no tumor palpable; while at the pylorus it is not difficult to discover induration if the disease has progressed far enough and the liver does not overlap the growth. In the presence of very thick or rigid abdominal

walls its detection may be rendered difficult and somewhat uncertain.

Gastrectasia almost invariably occurs and will be discovered by the physical signs of that condition. When gastrectasia results from pyloric obstruction, the steps in the process are analogous to those observed in dilatation of the heart from obstructive disease; in other words, there occurs first excessive demand upon the muscular tissue of the organ, which hypertrophies in compensation; later this compensation fails and true dilatation follows. Sometimes it is possible to make out enlarged lymphatics in the retroperitoneal tissues or in the mesentery; or the left supraclavicular gland may be enlarged.

On the whole, the discovery of a manifest pyloric tumor with gastrectasia, together with the stomach symptoms before mentioned and the general manifestations of the local disease, strengthens one's belief in the existence of carcinoma ventriculi, but an unequivocal diagnosis should not be made without the very valuable and confirmatory evidence obtained by the direct examination. In some cases very valuable information may be elicited by the simple passage of the tube; for instance, in case of carcinoma of the cardia, the tube may meet with an obstruction about fourteen inches from the teeth, and, if esophageal dilatation exists, contents lodged above the cardia may be withdrawn and examined. No hydrochloric acid will be found; there may or may not be lactic acid; no biuret reaction will be obtained unless predigested albuminoid food has been eaten; the acidity will be very low, if present at all. Or it may be found that the tube withdraws the solids best when introduced an unusually long distance, say 28 or 30 inches from the teeth, indicating extensive dilatation of the stomach.

Gastrorrhagia may take place and a large amount of blood be vomited, but this is a rare occurrence. Disorganized blood may be present in the contents, often resembling "coffee-grounds." Red blood-cells may be entirely disintegrated, but the test for hemin crystals may be positive. Fragments from the surface of the carcinoma may be discovered, and cell-nests revealed by the microscope. Usually considerable thick, tenacious mucus is present. Sarcinæ are not so frequently found as in benign pyloric stenosis with gastrectasia. A very large amount of foul-smelling, dark, stagnant contents may be withdrawn, containing remnants of food eaten days before. Such contents almost always indicate pyloric stenosis, and would not be expected in a case of malignant disease of the fundus. Acidity is usually very high; in many cases it reaches 120, requiring 12 c.c. of decinormal sodium-hydrate solution to neutralize 10 c.c. of stomach contents. The acidity depends in most cases upon organic and combined acids, lactic acid being present in unusual quantities.

Hydrochloric acid is absent as a rule, but a few cases have been observed in which it was present until late in the disease. The absence of hydrochloric acid has long been known to be of slight significance as an evidence of gastric carcinoma, but the presence of hydrochloric acid was considered highly conclusive evidence that no malignant disease existed. Unfortunately, this diagnostic prop has been taken away by the indisputable cases in which hydrochloric acid has been present. A case which I observed, and repeatedly examined, was reported by Dr. Charles G. Stockton,[1] in which hydrochloric acid was found with a large visible and easily palpable pyloric carcinoma. Dr. Park performed gastro-enterostomy upon this case.

The chief interest now lies in the question of the presence of lactic acid and lactic-acid-forming micro-organisms in the stomach contents of carcinoma ventriculi.

Lactic acid must be considered under two distinct headings: First, its occurrence under normal and various morbid conditions on ordinary diet, or when introduced preformed into the stomach; second, its formation in the stomach after food absolutely free from lactic acid has been eaten.

In 1892 Martius and Luttke showed that lactic acid was not a normal constituent of the gastric contents. Prior to that time the dictum of Ewald and Boas, that lactic acid was present in the normal stomach for about thirty or forty minutes after Ewald's test-breakfast of a roll and water, was accepted. Boas investigated the subject thoroughly, and in 1893 announced that the confusion arose because all products of the bakery contained an appreciable amount of lactic acid. Boas was dissatisfied with Uffelmann's test, and he devised a new and elaborate method for the detection of lactic acid. This method is based upon the fact that manganese dioxide and sulphuric acid decompose lactic acid, forming acetic aldehyd and formic acid. Boas' test conducted as a qualitative examination is as follows: The gastric contents are filtered, and 10 c.c. of the filtrate are tested for the presence of free

[1] New York State Medical Association meeting, October 15, 16, 17, 1895.

acids by Congo red; if free acids are present, an excess of barium carbonate is added. The contents are then evaporated in a porcelain capsule over a water-bath, to the consistence of syrup. The carbon dioxide is driven off by boiling with a few drops of phosphoric acid. The further directions are, cool and treat two or three times with 50 c.c. of ether that is absolutely free from alcohol; digest with the ether half an hour, evaporate, and dissolve the residue in 45 c.c. of water; put this into a flask and add 5 c.c. of sulphuric acid and a small quantity of manganese dioxide. A bent glass tube connects this flask with a mixture of equal parts of one-tenth normal iodine solution and one-tenth normal sodium-hydrate solution, making an alkaline iodine solution. The flask is now carefully heated, and as soon as boiling occurs the iodine solution becomes slightly smoky and the odor of iodoform is detected if lactic acid is present.

Boas devised a test-meal, consisting of a tablespoonful of oatmeal flour to a litre of water, which may or may not be flavored with a little salt. The stomach to be examined is washed out thoroughly at night and the test meal given. The contents are withdrawn in the morning and examined for lactic acid after the manner described. Boas found by this method that lactic acid was never present at any stage of normal digestion, nor was it present in any abnormal condition of the stomach excepting carcinoma, in which disease it is almost invariably present in large quantities. Cases of cancer may exist in which no lactic acid is found. On ordinary diet lactic acid is usually present in larger quantities than are found after the flour-soup test-meal.

In an admirable review of Boas' work D. D. Stewart[1] points out the absolute importance of eliminating from consideration all test-meals in which lactic acid exists preformed. Dr. Stewart emphasizes the particular necessity for exact technique, and says his experience accords entirely with that of Boas. Stewart also speaks of the unreliable nature of Uffelmann's test.

In a series of articles upon "The Early Diagnosis of Carcinoma of the Stomach, with the Bacteriology of the Stomach Contents,"[2] Fenton B. Turck says he finds that lactic-acid-forming micro-organisms are present in abundance in the stomach when carcinoma exists. In no other affection are they so numerous.

In an excellent article, entitled "The Significance of the Presence of Lactic Acid in the Stomach,"[1] Julius Friedenwald carefully reviews Boas' work and gives the results of his investigations. In twenty-nine examinations made, in eight normal cases using the Boas technique in detail, no lactic acid was found. In four cases of superacidity, none was found. In twelve examinations upon eight cases of atony, in but one was any lactic acid found, and then only the faintest trace, that might be accounted for by swallowing lactic acid from the mouth. In two cases of non-malignant dilatation, in one of which hydrochloric acid was continually absent, no lactic acid was present. Twelve examinations in eight cases of chronic gastritis, with hydrochloric acid absent in all, resulted in finding no lactic acid, except in mere traces in one case (probably swallowed). Four cases of secondary gastric catarrh, with hydrochloric acid absent, had no lactic acid. In four cases of gastric carcinoma, with an absence of hydrochloric acid, lactic acid was found in all and at every examination. Friedenwald therefore confirms Boas' statements.

Besides the germs that form lactic acid in culture media, one other, called the faden bacillus,[2] has been found. This is a long, delicate, thread-like bacillus found in the stomach in carcinoma, and in no other disease, which has never yet been cultivated. Its presence is highly diagnostic of carcinoma. Kaufmann first found it in the gastric contents; Boas describes it in the 1895 edition of his work on "Diseases of the Stomach." Julius Ullmann found it in one of our cases without palpable tumor or perceptible dilatation, but with lactic acid present and some food stagnation. There are cases in which hydrochloric acid is present; and in some of these, even though dilatation and food stagnation occur, lactic acid is not found. Such a case was the one before mentioned, which was reported by Dr. Stockton. In this case lactic appeared as soon as free hydrochloric acid disappeared, and it persisted thereafter.

In a few cases Boas' method has given me valuable assistance in excluding carcinoma, and in a few cases I have been, by its assistance, better able to make a provisional diagnosis early and while yet no tumor was palpable. Max Einhorn says[3] Boas' lactic-acid test is of great value, but there are cases in which the constant appear-

[1] MEDICAL NEWS, Feb. 16, 1895.
[2] *Journal of Am. Med. Association*, March 2, 9, 16, and 23, 1895.

[1] *New York Medical Journal*, March 23, 1895.
[2] Wilhelm Schlesinger and Rudolph Kaufmann: "Ueber Einen Milchsaure bildenden bacillus and Sein vorkammen in Magensafte:" *Wien. klinische Rundschau*, Jarg. 9-95, No.15, 5, 225-227. 227.
[3] "Diagnosis and Treatment of Stenosis of the Pylorus:" *Medical Record*, Jan. 19, 1895.

ance of lactic acid is observed, and still no cancer exists, also cases of carcinoma without lactic acid. Einhorn cites a case of each kind.

Under normal conditions the rennet-ferment may be present in dilutions up to $\frac{1}{40}$, and the rennet-zymogen up to $\frac{1}{1\,5\,0}$. In diseases of the stomach attended by little or no organic change the zymogen may be present up to $\frac{1}{6\,0}$ to $\frac{1}{1\,5\,0}$, although with an absence of hydrochloric acid the ferment may be reduced $\frac{1}{1\,5}$ to $\frac{1}{5}$. In chronic gastritis and carcinoma the ferment may be entirely absent, while the zymogen is markedly diminished; in the former disease as low as $\frac{1}{3}$, in the latter $\frac{1}{4\,0}$ to $\frac{1}{1\,3}$, or lower according to the extent of the disease. Therefore, the amount of zymogen present affords some information as to the existence of organic disease. J. Friedenwald[1] has studied the matter carefully, and the above figures are taken from his findings.

The gastrodiaphane, devised by Max Einhorn, assists the inventor in diagnosticating malignant disease of the stomach. In cases where the growth thickens the anterior wall, its transparency is diminished and a dim light is seen in that situation, whereas over other parts of the illuminated stomach the light is transmitted with intensity. Dilatation of the organ is certainly made out and that is an important fact. I have used the instrument occasionally during a period covering about three years, and consider it a very valuable addition to our armamentarium.

It is to be hoped that in the future we may be able to make an early diagnosis, before any tumor or dilatation is manifest, so that surgical intervention may reap better results and lives may be greatly prolonged or saved.

436 FRANKLIN ST.

CLINICAL MEMORANDA.

A CASE OF TRAUMATIC OPHTHALMOPLEGIA.[2]

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OF NEW YORK.

ON the 17th of November, 1895, Edward F. McC., aged 6, while walking with a slate-pencil in his hand, stumbled and fell on a board sidewalk. He was picked up in a semi-unconscious state and taken home. Dr. Edward L. Bull was called to see him soon after the accident, and found ptosis, with total ophthalmoplegia of the right eye. There was a punctured wound beneath the right orbital edge, at about the junction of its middle and inner thirds. Besides this wound of the upper part of the eyelid, which was still bleeding, there was a slight bruise or mark on the brow, as though it had struck upon the pencil lengthwise. Dr. Bull examined the parts carefully, but could find no foreign body. On testing the vision of that eye, the boy counted fingers and recognized a watch, but it is now doubtful if he saw the fingers with the *injured* eye, and the loss of sight may have been immediate. It is certain he had no perception of light in the eye a few days later. He looked pale and felt sick, and vomited from time to time for forty-eight hours after the accident. He then recovered his usual health and went about his play as usual, and has been well, so far as his general health is concerned, ever since. Dr. Bull sent him to me a few days after the accident. I found total blindness of the right eye, with absolute ophthalmoplegia and ptosis. The third, fourth, sixth, and optic nerves were totally paralyzed. Ophthalmoscopic examination showed nothing abnormal in the media or in the fundus. It was thought there was slight exophthalmus at first, but I was not sure there was any when I saw him. He has had no pain in or about the eye at any time since the injury, and there have been no indications for treatment.

When I saw him on January 8, 1896, there had developed a slight paleness of the right optic disk. He had also recovered the power to raise his right upper lid a very little; otherwise, the *status* remained unchanged. There is now not only well-marked atrophy of the optic disk, but a neuro-paralytic keratitis has developed itself. The eyeball is slightly red and the cornea is hazy and anesthetic.

The problem in this case is as to the *nature of the injury*. It seems to me most probable that the slate-pencil entered the orbit, injured the lenticular ganglion, and fractured the walls of the orbit at or near its apex. The pencil may still be partly in the orbit and partly in the cranial cavity. I presume the same symptoms could have been brought about by fracture of the orbital walls from the force of the blow of the brow upon the board sidewalk, and possibly even by shock or concussion; but the punctured wound seems to indicate that a portion of the slate-pencil is embedded somewhere in the orbital tissues so deeply as not to be felt with the finger.

CASES ILLUSTRATING VARIOUS PATHOLOGICAL STAGES IN INFLAMMATORY PELVIC DISEASE.[1]

BY LOUIS FRANK, M.D.,
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ASSOCIATE PROFESSOR OF OBSTETRICS AND DIRECTOR IN THE BACTERIOLOGICAL LABORATORY IN THE KENTUCKY SCHOOL OF MEDICINE.

THE cases I report illustrate very well the different conditions we find in inflammatory pelvic affections as a result of tubal diseases. The first of this series was operated upon to-day, the patient being a girl aged 18 years, having the following history:

Two months ago when I first saw the patient she had had an abortion resulting in incomplete expulsion of the membranes, followed by fever, a great deal of abdominal tenderness, and metrorrhagia. Her menstruation up to

[1] THE MEDICAL NEWS, June 22, 1895.

[2] Reported to the Section on Ophthalmology of the New York Academy of Medicine, Jan. 20, 1896.

[1] Reported to the Louisville Clinical Society.

that time had been perfectly regular, with the exception of about ten months ago, at which time she missed one period, which was followed by severe flooding, probably also an abortion. However, there was never any pain, either preceding, during, or after the menstrual epoch. Her menstruation was normal. She denied ever having been pregnant, but the evidence was unmistakable. She could not account for her flooding, nor could she account for the absence of menstruation for two months preceding the time at which I saw her.

Examination revealed an abdomen moderately distended, rather tender to pressure, which tenderness was exquisite over the ovarian regions. There was considerable bleeding, consisting largely of clots. Bimanual examination showed the uterus to be enlarged, tender, and more or less fixed in a slightly retroverted position. The ovaries were very tender; the tubes feeling somewhat hard were very easily mapped out, much more so than common, and there seemed to be no adhesions. She had some elevation of temperature.

I curetted her thoroughly, gave an intra-uterine douche of bichloride solution, and introduced a uterine drain of gauze, which was removed after forty-eight hours. This was followed by douching with plain hot water; she had been thoroughly purged; the distension disappeared, but there remained considerable tenderness about the abdomen.

She convalesced fairly well, and in several days was out of bed. I saw no more of her until three or four days ago. She told me then that since she had been up she had never felt perfectly well, though for a short while she had not much trouble, still with the advent of her menstruation again her trouble had been worse. She had constantly severe abdominal pains, which at the time of her menstruation were almost unbearable. She had been compelled to remain in bed on account of the severity of this pain. She had taken morphia at intervals, could hardly go about, had begun to lose flesh, had lost appetite completely, and presented in other words those symptoms which we find so characteristic in inflammatory pelvic trouble.

I examined her very carefully, finding the uterus retroverted, not freely movable, ovaries and tubes very tender and fixed in adhesions. The tubes, I thought, were somewhat enlarged. I advised waiting awhile, but she insisted that something should be done for her.

To-day I operated by the abdominal route. I found the uterus adherent, as I had suspected, these adhesions consisting of long bands not dense in character, such as we find in chronic inflammatory trouble, but easy of separation. They were separated very carefully. The tubes and ovaries were embedded in adhesions, the intestines being adherent over them upon the right side. After some careful manipulation these were separated. Upon the left side the ovary and tube were also adherent, the fimbriated end of the tube passing out from these adhesions and being attached to a coil of intestine almost on a level with the umbilicus. She had had considerable pain at this point. The ovaries were not enlarged; one of them presented a hemorrhagic cyst, possibly a ruptured Graafian follicle, but the disease was not at all sufficient to justify their removal. The same may be said of the tubes, which, though embedded in these adhesions and showing that they had been the source of infective peritonitis, did not contain any pus. There was a small amount of serum in each tube. The tubes were milked toward the uterine end, then toward the distal end, this secretion being carefully sponged out. The fimbriae were all separated, the tubes and ovaries being allowed to fall back into the cavity, the omentum being packed down around the intestines, separating them completely from the pelvic cavity. The abdomen was then closed with silkworm-gut in the usual manner. I expect the patient to get well without the least trouble.

Case 2.—The second case was operated upon about two weeks ago. Her history is somewhat similar to the preceding one, in detail being as follows:

The patient, S. R., aged 25 years, was referred to me a month ago by Dr. Sieffert for a left pyosalpinx. Four years ago she had had an abortion; though previously always in excellent health, had since had trouble with each menstrual epoch, and of late during the interval between her menstrual periods. This trouble consisted of bleeding, with pain during and also preceding the flow. Lately she had had metrorrhagia. She had never been pregnant except on this one occasion four years ago. There was constant pain in the back and hips, also servere abdominal pain, and she was compelled to remain most of the time in bed.

A careful examination under chloroform revealed an enlarged ovary upon the right side with considerable thickening about the tube; on the left side a great deal of induration and thickening, but no distinct tumor mass could be made out. The uterus was enlarged and not perfectly movable, and there was a purulent discharge from the cervix. She being very anxious to have children, and thinking that she might possibly be benefited, at least to some extent, with something less than an abdominal section, curetting was advised and carried out, from which she recovered without any trouble whatsoever. There was no improvement in her symptoms, and at the first menstrual period after the curetting all symptoms were, if anything, increased in character. She at last consented to a celiotomy, and upon section there was found an adherent uterus with adhesions of the ovaries and tubes to surrounding structures. Both ovaries were enlarged, the right much more than the left. The tubes showed that condition known as hydrosalpinx, the one upon the left side being about as large in diameter as the index-finger, the one on the right side possibly the diameter of the little finger. The adnexa of both sides were removed; the abdomen sponged out thoroughly and closed in the usual manner.

She had for the first week no trouble whatever, but after removal of the stitches she began to complain considerably, and an examination of the abdomen showed formation of stitch abscesses. These were opened and thoroughly washed out, and treated as we usually treat such abscesses.

Case 3. — The third case was operated upon five

weeks ago. The patient, aged 30 years, was referred to me by Dr. Dunn. Her history is that she had been in perfect health until a week before I saw her, when she was seized with sudden pain in the abdomen, so severe that she was at once compelled to take to her bed. A rapid swelling appeared; she became unconscious, and was resuscitated by some of her friends. About the same time she began to menstruate. Dr. Dunn did not see her until two days after the symptoms which I have just cited. He found a large tumor completely filling the pelvis and bulging into the vagina.

When I saw the patient she was having some fever, a very rapid pulse, abdomen very much distended, obstinate constipation, menstruation still going on, though scanty. A positive diagnosis was very difficult to make on account of the meagre history which was obtainable. Dr. Dunn and I, after a thorough examination, finding this large tumor completely filling the pelvis above and bulging into the vagina to such an extent that the index-finger could hardly go by it, concluded that our patient had one or two things—either she had an extra-uterine pregnancy which had ruptured into the broad ligament, or she had an old pelvic peritonitis, which had been relighted by leakage from the pyosalpinx into the peritoneum. Though the patient's history pointed more to an extra-uterine pregnancy, still her condition, character of the tumor, and the absence of all signs of pregnancy inclined us rather to the latter opinion.

She was sent to the Infirmary with a temperature of 101° F. and a pulse of 124. Operation revealed upon both sides immense tubo-ovarian abscesses, which were simply enormous, and upon one side extended down into the pouch of Douglas, forming the mass which we had felt in the vagina. This mass did not have a fluctuating feel. This was due to the great amount of inflammatory deposit around the tumor. The tumors completely surrounded the uterus above, in front, and below, and it was necessary to separate them very carefully to prevent injury to the bladder and intestines. After separating the numerous and dense intestinal adhesions above, the tumor on one side was removed, though in doing so it was ruptured, allowing fully a quart of pus to flow out, a large portion of which escaped into the abdominal cavity. In like manner, in removing the tumor from the other side, pus escaped into the cavity, though this was not due to rupture in the removal of the tumor, but to one which had existed before removal of the tumor, as shown by an abscess sac formed of the tumor upon one side and of the parietal peritoneum upon the other. All in all, more than two quarts of pus escaped. The abdominal cavity was thoroughly washed out with sterilized water, a drainage-tube was inserted, and the patient put to bed. For several days she was in a precarious condition; however, as her bowels began and continued to move freely, and we persisted in the use of stimulants, we had the pleasure of seeing her pulse gradually decrease and distension disappear, until now she has gone on to a good recovery, there remaining, however, a fistulous tract at the site of the drainage-tube. This fistula will probably remain until finally the ligatures, which were put upon the ligaments on one or both sides, and which have no doubt become infected, suppurate and come away.

These three cases illustrate very beautifully the several steps in one of the commoner inflammatory pelvic troubles. The first case, if it had been left alone, would have gone on to, first, hydrosalpinx, then pyosalpinx, later possibly tubo-ovarian abscesses, such as in the last case reported. Case 1 shows what can be done by early operation—extensive and dangerous adhesions may be prevented, as may also the formation of pus with its attendant dangers, and our patients undoubtedly have a far better chance of recovery than in those cases that are "tinkered" and allowed to go on until they have reached the condition in which the last patient was found. The first case was the simplest of the three. The second case, which shows the next step in the development of pus-tubes, was much more simple and much easier for the operator, and the outlook better for the patient, than the last case; at the some time the adhesions were dense, and infection had evidently been more severe and longer continued than in case 1. The earlier we can get these cases the better it is for both the patient and the operator.

I have no doubt, as before stated, that the first case will be completely cured. It belongs rather to what we may call true conservative surgery. In such cases conservative surgery does not consist in deferring operation, but in exploratory incision, with freeing of adhesions when present, and non-removal of the appendages unless positive evidence of disease of these organs is present. It often requires more courage to return the ovaries than to remove them after the abdomen has been opened.

NOTE.—These cases have all made complete recoveries. Case 1 is relieved in every respect; she has absolutely no pain; the stitches were removed on the seventh day; the incision had united throughout with as near an approach to union by first intention as it is possible to obtain; there was never the least pus, not even a drop of serum from a stitch-hole. She has menstruated since the operation, menstruation being as free from pain as before her abortion.

NEW APPARATUS.

A BIPOLAR STOMACH ELECTRODE (INTRA-GASTRIC).

BY FENTON B. TURCK, M.D.,
OF CHICAGO.

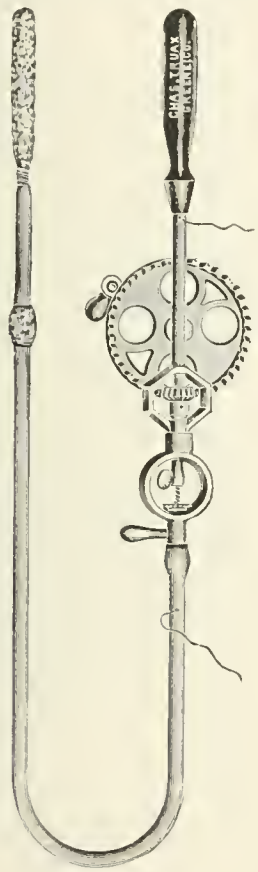
THE gyromele[1] has been used for some time as an electrode within the stomach, and is of special value, as all parts of the stomach can be reached. The other electrope is applied externally. Any value found in the use of intrafaradization or intragalvanization has the additional advantage of the mechanical effects of the gyromele, the massage, and vibratory effect produced by the revolutions of the instrument.

I have devised a bipolar electrode, so that both poles

[1] This was first reported at the International Medical Congress at Rome, 1894; later reported in the *Wiener med. Wochenschrift*, Nos. 1 and 2, 1895: "*Eine neue Methode der Diagnose und Therapie gewisser Magenkrankheiten.*"

can be used within the stomach, with a single gyromele. It is not necessary to use an external electrode upon the abdomen, although it may be used if so desired.

The cable in the gyromele acts as one of the poles; a second wire concealed in the wall of the stomach-tube that ensheaths the gyromele acts as a second pole. At a distance of about two inches from the upper and five inches from the lower distal extremity of the stomach-tube, this is encircled by a narrow metal band. Each band is pierced by the wire that passes within the tube-wall. At the point of entrance of the wire there is a small projection, for the attachment of the wire that leads to the battery. The metal band, which is about five



THE GYROMELE.

inches from the other end (distal), is covered by a sponge. By drawing the gyromele back and forth, with both poles connected with the battery, all parts of the stomach, from the esophageal opening to the pylorus, can be reached.

A POTATO-CUTTER FOR BACTERIOLOGICAL LABORATORIES.

BY MAZŸCK P. RAVENEL, M.D.,
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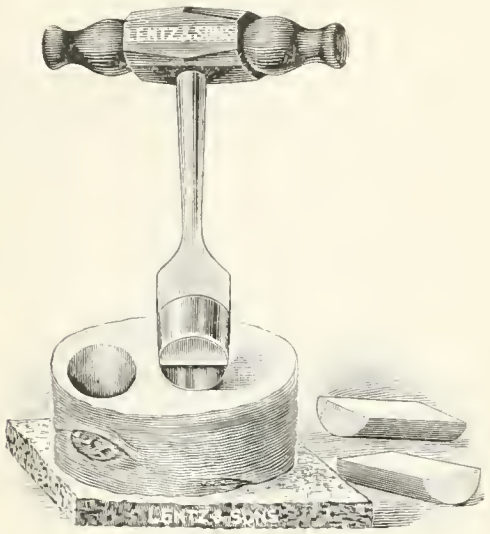
DIRECTOR OF THE LABORATORY OF HYGIENE, PRINCETON, N. J.

THE method of Bolton for preparing potato as a culture medium for bacteria has been very generally adopted, largely to the exclusion of older methods.

The accompanying cut, which requires no explanation to be understood, illustrates a simple device for facilitating the prepartion of the plugs. A single throw of the cutter



removes a cylinder of the potato, and at the same time divides it into two equal parts, giving a smooth, flat surface for culture. The size of the instrument has been adjusted for the commonly used tube of three-fourths inch inside diameter.

It has been made for me in the most satisfactory manner by Messrs. Chas. Lentz & Sons, of No. 18 North Eleventh street, Philadelphia, Pa., from whom it may be obtained.

MEDICAL PROGRESS.

Repeated Left Hemiplegia in Infancy and Old Age.—LANNOIS and PAULY (*Lyons médical*, 1895, No. 51, p. 562) have reported the case of a man dead of pulmonary tuberculosis at the age of 66 years, who suffered some cerebral disorder at the age of 18 months or two years, followed by left hemiplegia. At the age of 16 years he began to have epileptiform convulsions, which involved primarily the left side, and continued at long intervals until between the ages of 40 and 45. When 55 years old the patient was again seized with left hemiplegia, followed by contractures. Upon post-mortem examination, the right cerebral hemisphere presented a large loss of substance, involving the convolutions adjacent to the fissure of Sylvius, the adjacent convolutions being reduced in size. The cavity formed was occupied by fluid and communicated with the lateral ventricle, but no trace of thrombosis or embolism could be detected. The right cerebral peduncle was much reduced in size, and the opposite anterior pyramid of the medulla was greatly atrophied. In the fresh cord a triangular area of degeneration could be seen involving the left lateral tract, and especially marked in the cervical enlargement.

Pneumococcos Abscess following a Local Lesion in the Course of Pneumonia.—At a recent meeting of the Société de Biologie, ZUBER (*Semaine médicale*, 1896, No. 4, p. 27) reported a case of pneumonia in which an abscess developed at the site of puncture made in injecting caffeine benzoate subcutaneously. The pus evacuated contained pneumococci in pure culture, as shown by direct examination, by culture, and by inoculation in guinea-pigs. This observation illustrates the relation between a point of lower resistance and a constitutional disorder of infectious origin, due to a local lesion with localization of the infective micro-organisms.

Congenital Volvulus.—At a recent meeting of the Société anatomique de Paris, PETIT (*Bull. de la Soc. Anatom. de Paris*, tome ix, Fasc. No. 17, p. 670) reported the case of an infant dead three days after birth in the sequence of symptoms of irremediable intestinal obstruction, the condition of the child forbidding surgical intervention. There had never been an intestinal evacuation, although the anus was patulous. Upon post-mortem examination, a volvulus was found to exist at the junction of the cecum with the ascending colon. The intestine was dragged to the right, passing beneath the cecum, which was provided with a long mesentery. The cecum and the adjacent ileum were twisted twice upon themselves, and continuity with the colon was obliterated. The large intestine was not well developed, while the small intestine was greatly distended and contained a considerable amount of fecal matter.

THERAPEUTIC NOTES.

Rectal Insufflations of Boric Acid for Intestinal Atony.—MERKLE (*Münchener medicin. Wochenschrift*, 1895, No. 52, p. 1209) reports the successful employment of rectal insufflations of boric acid for the relief of the flatulence and constipation dependent upon atony of the bowel. For this purpose he uses a powder-blower, the anointed nozzle of which is introduced into the rectum after thorough separation of the nates. From 30 to 60 grains of boric acid are thus introduced. The nozzle of the insufflator should have a calibre of from .25 to .4 inch and the rubber bulb should be sufficiently large and stout to accomplish its purpose effectively.

Treatment of Grave Anemia with Subcutaneous Injections of Iodine and Iron.—

I. Take of:

Pure iodine	3 grains
Potassium iodide	A sufficient quantity
Distilled water	5 fluid drams.—Mix.

II. Take of:

Iron and ammonium citrate	15 grains
Distilled water	From 2½ to 5 fluid drams.—Mix.

Once or twice daily, fifteen minims of the first solution are injected into the thigh, followed at once by a similar injection of the second.—MENELLA, *Médicine moderne*.

The Treatment of Chilblains.—In the intense form of chilblains without ulceration the affected parts should first be enveloped in aseptic compresses wet with a decoction of walnut leaves (from 1½ drachms to half an ounce of the leaves to a quart of water), and the whole covered with an impermeable dressing.

When the irritation has somewhat subsided the wet dressing may be replaced by an ointment or a powder, as follows:

Boric acid		gr. xv.
Tannic acid		gr. v.
Vaselin		℥ ijss.—M.
Starch, Lycopodium	aa	℥ ijss.
Tannic acid		gr. v.

To maintain the application suitable gloves may be worn. In the mild form of the disorder the decoction of walnut leaves is applied morning and night, and during the day the ointment or powder formulated is used, gloves being worn meanwhile.

When ulceration exists the wound should first be carefully washed with a solution of mercuric chloride 1:1000, and the compresses applied wet with a solution 1:2000. The ulcerated surface may be touched with tincture of iodine or camphorated naphtol, and then covered with aseptic gauze impregnated with borated vaselin or glycerole of starch. When granulations have formed in large numbers the stick of silver nitrate may be applied gently. Should these measures fail, an ointment may be employed, such as that of zinc oxide. If needed constitutionally, cod-liver oil or iron iodide should be administered.

In a prophylactic way those susceptible to chilblains should be advised to be active when exposed to cold and to avoid prolonged exposure and also abrupt change from cold to heat, and *vice versa*. The use of cold lotions throughout the winter may also prove serviceable. At the same time a pill constituted as follows may be taken internally from twice to four times daily:

Quinin. Sulphate, Ergot	aa	gr. ¾
Powdered digitalis-leaves		gr. $\frac{1}{12}$
Extract of Belladonæ		gr. ⅙

—*Press médicale*, 1895, No. 70.

Intoxication from the Topical Application of Pyrogallol.—VOLLMAR (*Deutsche medicin. Wochenschift*, 1896, No. 3, p. 45) has reported the case of a man, 69 years old, who had suffered with psoriasis for twenty years and who was given a 10-per-cent. ointment of pyrogallol for topical application. Two hours after rubbing the ointment into the forearms, there was complaint of intense pain in these parts, with swelling and heat and general restlessness. The little ointment still remaining was at once removed, and cold affusions made. The temperature rose above the normal, and albumin appeared in the urine. In the course of several days these symptoms receded and the case gradually progressed to perfect recovery. There was evidently in this case an idiosyncrasy to pyrogallol, as the amount that could have been absorbed must have been very small.

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SATURDAY, FEBRUARY 29, 1896.

ANTIVIVISECTION.

In our issue of February 15th we devoted considerable space to a full and complete exposition of the sweeping and indeed almost prohibitory character of the bill now before Congress restricting vivisection in the District of Columbia. And attention was called, in our editorial on the subject, to the probability of this radical movement in Washington being the signal to the so-called humane societies throughout the country for similar local movements in every State in the Union.

This suspicion was evidently well founded; for already a bill of similar import has been introduced into the Legislature of Massachusetts, and it is reported that a like measure is being prepared for the New York Legislature. The Massachusetts Medical Society is showing commendable promptness and vigor in opposing this bill. The society has issued a circular to all its members and to all the prominent medical and scientific men of the State, calling upon them to communicate at once with their respective representatives in the Legislature, urging upon them the absolute necessity of opposing this measure. As the various state societies are liable to be called upon to take similar action at no distant day, it may be well to state that this circular announces that "from the time when Harvey discovered the circulation of the blood 'by frequently looking into many and various living animals' down to the present day, when the discovery of the antitoxin treatment has robbed diphtheria of almost all its terrors, nearly every important advance in medicine has been rendered possible by knowledge acquired through the careful study of the phenomena of life as revealed by what are popularly known as 'vivisections'; that such investigations are at present conducted with every precaution against unnecessary suffering and by men who do not admit for a moment the claim of any society to be actuated by motives more humane than those by which they themselves are guided, and that, as there is no abuse to be corrected, the proposed legislation is totally uncalled for."

There is no doubt that the bills already presented, and others which are doubtless being prepared, if enforced will seriously hamper and may practically abolish biological and medical research. It is therefore the part of wisdom to put forth every effort to strangle them in their birth.

But we, as a profession, may as well recognize the fact that this is a question that will not down. It will rise year after year to hamper and annoy. We would therefore advance the suggestion that the wise and prudent course is, not to await the action of the humane societies, but for each State Medical Society to take the initiative, to instruct its committee on legislation to have a proper bill drawn up, presented, and placed upon the statute-books. This would put a stop to the constant agitation of the subject and preserve by proper restrictions (and it should have restrictions) this valuable and indispensable method of experimental medicine.

A NEW BREED OF "DOGS OF WAR."

No animal has been more abominably and unjustly slandered in proverb and metaphor than the dog. His name has been made a synonym for every evil passion which stirs our bosoms, from the cowardly treachery implied in "Is thy

servant a dog that he should do this thing?" to the savage fury of the classic "dogs of war." And yet these attributes are practically never displayed by the noble brute—except where he has had to associate too much with man, especially in the Orient, where most of these metaphors originated.

At last, however, the "leaden foot" of Justice seems to be coming his way, and he is being brought before the world, in relation to warfare at least, in a rôle more appropriate to his true character.

An ingenious German "cynophile" has been developing the dog's well-known hunting and "ranging" powers as a sort of auxiliary field-hospital corps for finding and carrying aid to the wounded after a battle. According to a recent report in *The Lancet* his experiments gave such promising results that the military authorities recently invited him to make a formal field trial of his canine corps before a committee of experts. The "wounded" were represented by some twenty infantry soldiers, who were scattered behind stumps and rocks, in gullies, and among underbrush over quite a stretch of rough, unbroken country. At the order "Seek wounded" the dogs dashed away, and in a comparatively few minutes discovered and "located" every one of the hidden soldiers. The animals carry under their necks barrel-shaped canteens, each containing water, brandy, and cakes of compressed peptonoids in its compartments. Upon their backs are small packages of surgical dressings, a blanket in cold weather, and in the daytime a number of small flags or pennants with slender pointed stems which the wounded man can set up in the ground by his side, and thus guide the rescue party to him. After dark a small portable electric lamp is attached to the dog's forehead, so that his movements can be followed and his "finds" located. In the intervals of active service the dogs are trained to assist the picket line, acting as water-carriers and as estafets. The committee of experts were so impressed with the value of the dogs that it is intended to have a pack accompany several of the infantry regiments in the field manœuvres next summer. Any one who knows something of the fearful agony often endured from thirst, sunstroke, attacks of insects, and exposure by the wounded in the hours, or even in some cases days, following a battle, will see at once the immense value of such a "corps." In our late war many a poor fellow's life was lost solely from the delay in reaching him; and even in some cases after heavy and scattered fighting in the ravines among the thick underbrush, his remains were not discovered until weeks afterward. The "missing" quota of a regiment is often almost as large as its "killed." All honor and success to the new and only *genuine* "dogs of war," who in the humanity—or shall we say "caninity"?—of their mission have rather the advantage of their comrades of the "higher" species.

THE YEAST PLANT AS A PATHOGENIC ORGANISM.

We have already taken notice in these columns[1] of the introductory work upon the supposed relation of the yeast fungus to the production of certain tumors. Investigation upon the pathogenic properties of these organisms has been unremitting, and we now propose to present another review of the subject, as it promises to occupy a prominent place in the parasitologic discussions of the near future. It is at least safe to predict from the present tendencies that the budding-fungi are destined to receive a large share of the attention which has been so lavishly bestowed upon the supposed protozoan parasite of malignant tumors during the last three years.

The exact botanical position of the yeast plant has not been determined, though it has been known and employed so long in the fermentation industries. The morphology of many species of the yeast family is so inconstant that several botanists have looked upon the organism as a developmental stage of one or another of the filamentous fungi. Thus Juler and Jörgensen have very recently attempted to prove by their studies that the budding yeast cells represent but one stage in the development of true molds. When it is remembered that certain filamentous fungi like *Achorion Schoenlinii*, and *Trichophyton tonsurans* are well known human parasites, and that some molds like *spergillus* have been found to flourish in a parasitic relationship in man and other animals, both naturally and experimentally,

[1] Editorial, April 6, 1895, pp. 383–384.

then it does not seem improbable that the yeast plant, which is so much better adapted morphologically for a parasitic existence, should find a favorable soil for growth in the animal body.

The earlier experimental work upon the pathogenesis of the yeast organism was done by Neumayer, and Raum. Neumayer found that these plantlets possessed wonderful resistance against the digestive juices of animals, as living yeast-cells could be regularly recovered in the stools after the ingestion of considerable quantities of yeast. The administration of large quantities of this material by the mouth led to a gastro-enteric catarrh, doubtless on account of the irritative effects of the fermentative products resulting from the metabolic activities of the living yeast-cells. Raum used pure cultures of various species of *Saccharomyces* and uniformly produced death in rabbits by intravascular injections. Examinations of the organs of these animals showed that the fungal cells accumulated only in the lungs, where they thrombosed the blood-vessels. In only one case, in which a rabbit died two or three weeks after an intravenous injection, could Raum recover the organisms from the subcutaneous tissue, where a small caseous tumor had formed.

In 1894 Busse claimed to have isolated a species of yeast in pure culture from a sarcomatous-like subperiosteal neoplasm on the tibia of a woman. Inoculations with the tumor tissue and with pure cultures of the yeast fungi into rabbits and dogs were successful in so far that they showed the parasites to possess pathogenic properties; but no true tumors were produced. The striking resemblance of the vegetable cells in the affected tissues led Busse to compare them with the cancer inoculations, especially those described by Darier and Wickham.

Sanfelice followed with a record of his experiments with artificial cultures of a pathogenic variety of the yeast fungi obtained from fermenting fruit juice. The remarkable feature about this work lies in the regularity with which the experimenter succeeded in producing *neoplastic formations* in the lymphatic glands and certain visceral organs of his inoculated animals. Guinea-pigs were largely employed in this work, and after an interval of four to six weeks following an injection they died, showing numerous tumor-like foci from which the fungi could be recovered both in culture, and in various microscopic preparations. In his several published reports Sanfelice has always dwelt upon the resemblance of the yeast-cells in the infected tissue to the cancer parasites of almost all the workers who have in the past three or four years described these objects.

Simultaneously with these researches, Colpe found a pathogenic budding-fungus in a case of chronic cervical endometritis which he believed to be the etiologic factor in the affection.

Fermi and Aruch of Rome obtained a yeast culture with marked pathogenic properties from the lympathic tissue of horses affected with a peculiar form of infectious lymphangitis. From the purely histological side, Ajevoli and Pianese have attempted to identify certain so-called tumor parasites with yeast cells; and Roncali gives an elaborate description and a highly colored lithographic picture of certain round or oval bodies found in sections of an adeno-carcinoma of the human ovary, wherein he insists upon their yeast-like character, and their identity with similar objects previously looked upon as the protozoan parasites of malignant tumors. Corselli and Frisco present a preliminary communication upon their studies of pathogenic budding-fungi, and they report a case of sarcoma of the mesenteric glands in a woman, accompanied by chylous ascites in which pure cultures of yeast were obtained from the tumor tissue and from the ascitic fluid. These cultures were pathogenic in rabbits, dogs, and guinea-pigs, and in the latter animals tumors were produced very like those described by Sanfelice, and the animals died in twenty or thirty days.

As tempering, somewhat, these almost inconceivable results, obtained mostly by Italian investigators, comes the painstaking experimental study by Lydia Rabinowitch, made under the directions of Professor Koch. This investigator made inoculation experiments with about fifty different species of yeast. Out of these she found seven which possessed pathogenic activity when injected subcutaneously into mice and rabbits, though none of these cultures was pathogenic in guinea-pigs. The animals died

between the first and fourteenth day following the inoculation; vast numbers of yeast cells could be found in all the organs on appropriate treatment; and the pure cultures could be recovered from these organs. For the most part the fungi were disposed in the tissue spaces, though occasionally an intra-cellular parasite could be found. In all of these experiments, however, no chronic illness with the formation of neoplasms, such as noted above, could be induced.

From this very brief summary of the work done for the most part during the past year upon the yeast plant as a disease-producing organism, it seems to us certain that a new and very promising field of mycologic research has been opened—one which promises to materially extend our knowledge of certain infectious diseases, and one which may prove of vast importance in solving the mystery which still surrounds the etiology of malignant neoplasms.

We can at least feel assured, with the illustration afforded by the sporozoan theory of tumors, that a flood of literature by a host of investigators working in the new field will be poured upon us during the next year or two. Pathology has its fashions, and every one wants to be in the fashion.

ECHOES AND NEWS.

There have been no startling discoveries in the experiments with the X ray during the past week. Observations have been continued along the lines already suggested, and with marked success. By the use of a bell-jar, placed over the Crookes tube, the time of exposure has been reduced to seconds, making the pictures practically instantaneous. One experimenter announces that he has increased greatly the penetrating power of the ray and has thus secured shadow pictures through a block eight inches in thickness. Practical application has been continued in locating bullets, buckshot, needles, and other foreign bodies in the flesh. But no one has succeeded in destroying bacilli in their local habitat in the human body.

A bill has passed the Legislature of Virginia authorizing the appointment of female physicians for the female wards of the State insane-asylums.

The Illinois Medical College, of Chicago, has, through the advice of the more conservative members of its faculty, abandoned the proposed hypnotic clinic. The matter was receiving such sensational prominence that this course became necessary.

Haverhill, Mass., is suffering from an epidemic of diphtheria, and the authorities have been requested to formally order the schools closed. Of sixteen cases reported all have been traced to one school building.

Through a misunderstanding that has arisen between the faculty and the Board of Trustees of the New York College of Dentistry, the legal existence of this prosperous institution of learning is threatened.

A civil-service examination is staring the city physicians of Rochester, N. Y., in the face, since the Mayor refuses to remunerate them unless supplied with certificates of the Civil-service Examining Board.

Ohio has just acquitted herself in a most commendable way, by passing, without amendment, and with only one dissenting vote, a law regulating the practice of medicine. The profession of that State are to be congratulated upon this unprecedented success as a result of almost a quarter of a century of patient effort.

The annual convention of the World's Congress of Medico-climatology, held at San Antonio, Tex., formally adjourned on February 22. Papers were read by Dr. A. F. McKay, of Chicago, and Dr. A. M. Johnston, of San Antonio. A committee composed of Drs. Paul Paguin, of St. Louis; C. D. Hurt, of Atlanta; G. M. J. Bliem, of San Antonio; J. A. May, of New Holland, O.; and J. T. Acomb, of Pennsylvania, was appointed to report at the next convention on the advisability of petitioning Congress to establish sanitariums in different parts of the country for scientific study of consumption. Atlanta, Ga., was chosen as the next place of meeting.

The Camden County Medical Society, of New Jersey, has recently celebrated with appropriate ceremonies the semi-centennial of its organization. Among other proceedings of interest, busts of two of its founders and charter members, Richard M. Cooper, M.D., and Othniel H. Taylor, M.D., were presented to the Society.

The Woman's Health Protective Association of Philadelphia are adding laurels to the reputation of their association by their activity and success in procuring improved service from the street-cleaning department of that city.

Dr. Alexander T. Hunter died at his home in Spuyten Duyvil, N. Y., Feb. 14, 1896. He was born at Conesville, N. Y., in 1839, and was graduated from the New York University Medical College in 1863. In 1890 he was elected president of the New York County Medical Society. He was the first president to succeed himself since the organization, in 1807.

The old and well-known College of Medicine of Ohio, situated at Cincinnati, has become the Medical Department of the University of Cincinnati, and hereafter will be known by the double title of "The Medical Department of the University of Cincinnati" and "The Medical College of Ohio."

ON February 4, 1896, the Meharry Medical College of Tennessee, the principal medical college for the negro of the South, if not of the United States, held its commencement exercises, graduating eleven candidates. As a rule, the alumni of this institution are doing commendable work among their own race in the Southern States, where they command general respect.

DR. DONALDSON SMITH, of Philadelphia, returned last week from central Africa, where he has discovered several curious tribes of people, concerning which he will make a scientific report in due time.

DR. JOSEPH JONES, one of the most prominent members of the medical profession of this continent, died at his home in New Orleans on the 17th instant. He was a graduate of the University of Pennsylvania in 1855, and almost immediately thereafter was made professor of chemistry at the Medical College of Savannah, Ga., and filled this and associate chairs in the University of Georgia, the University of Nashville, and Tulane University at New Orleans in rapid succession. Since 1868 he has been identified with the latter, giving liberally of his time and remarkable talents to the service of his city and state. To him more than to all others is due the improvement of the sanitary condition, not of New Orleans alone, but of the whole Valley of the Mississippi. His ability as a scientist and historian was perhaps more widely recognized abroad than in this country.

DR. WILLIAM THOMSON, professor of ophthalmology at the Jefferson Medical College, Philadelphia, has been elected to succeed the late Dr. H. Earnest Goodman as attending surgeon to the Wills Eye Hospital.

ST. MARY'S Free Hospital for Children of New York, has purchased near Norwalk, Conn., thirty acres of land, and will erect on the property commodious hospital buildings. The property will be known as the Summer Home of St. Mary's Free Hospital for Children of New York.

MANY cases of typhoid fever have developed within the past few weeks in the Greenville district of Jersey City. The source of the contagion has been discovered in the wells from which the drinking-water was taken.

THE second annual meeting and dinner of the Brooklyn Alumni Association of the Bellevue Hospital Medical College was held at the Lincoln Club, Brooklyn, on Monday night, February 17, 1896. The following officers were elected for the coming year: Dr. George R. Fowler, president; Dr. George McNaughton, vice-president; Dr. L. W. Pearson, secretary; Dr. W. Waterworth, treasurer; Drs. R. M. Wyckoff, A. Pell, and J. Scott Wood, members of the Board of Managers. Toasts were responded to by Prof. A. A. Smith, M.D., of Bellevue College, Dr. W. H. Katzenbach, ex-president of New York Alumni Association, Drs. G. A. Evans, G. R. Fowler, and others.

DENNIS' AMERICAN SYSTEM OF SURGERY.—Scant attention is due to an anonymous paragraph which recently appeared in an English periodical, charging plagiarism against the new System of Surgery by American authors, the concluding volume of which will shortly appear. The charge is devoid of details and the name of the accuser is withheld, so that more than a general and absolute denial of the truth of the statement is alone possible. American surgeons, especially those of the eminence of the contributors to the American System of Surgery, have neither need nor desire to borrow ideas or language from their English *confrères*. The derivation of illustrations from various sources is customary on both sides of the Atlantic and is a practice common to nearly all medical works, without regard to country. The essence of the charge seems to lurk in the fear that the American System of Surgery would prove too successful a rival to native works, and hence the attempt on the part of English publishers to protect their market against competition. What higher compliment could be paid to the excellence of this latest production of American surgeons—the confession of fear to submit to rivalry?

A MOVEMENT is again on foot looking toward building, or making provision for a hospital for contagious diseases in the city of Brooklyn, to which persons able to pay for attention and care could be taken,

RESOLUTIONS ON THE DEATH OF THE LATE DR. JOHN H. RIPLEY, OF NEW YORK.

AT a special meeting of the Medical Board of St. Francis Hospital, of New York city, held February 18, 1896, the following resolutions were adopted:

WHEREAS, It becomes our painful duty to announce the death of Dr. John Howard Ripley, attending physician to the St. Francis Hospital, New York, and late president of its medical board; therefore, be it

Resolved, That the Medical Board desires to place on record its due appreciation of his long and valuable services to this institution, faithfully and cheerfully rendered for nearly a quarter of a century.

Resolved, That from his first connection with this hospital he was an ever-willing servant for its best interests, an ardent promoter of its highest aims, and an active participant in all its charitable benefactions.

Resolved, That his untiring zeal in the performance of his arduous and responsible duties, his wisely conservative judgment, his painstaking accuracy of observation, and his ever available and profound knowledge of clinical phenomena were qualities that command the highest respect of his associates and stimulate the emulation of all who share the results of his unselfish labors.

Resolved, That the remembrance of his manly disposition, his frank manner, his energetic spirit and scholarly attainments will ever serve as a cherished lesson from the well-ordered life of a dutiful worker, an indefatigable investigator, and a model physician.

GEORGE F. SHRADY, M.D., President.
G. M. EDEBOHLS, M.D., Secretary.

CORRESPONDENCE.

COLD BATHS A HEART STIMULANT.

1605 Walnut Street,
Philadelphia, February 22, 1896.

Editor of The Medical News.

Dear Sir: In the last issue of the News (p. 223) I have been made to say that my greatest contra-indication to the cold bath is a feeble heart. This is incorrect. I stated that an excessively weak heart should be regarded as *one* of the contra-indications to the rigid cold-bath treatment. If for no other reason, it is inadvisable under the circumstances, because of the fact that the patient exerts himself or even struggles against the unpleasant effects of the extreme cold. No one is more fully convinced that the external use of cold is a potent stimulant to the nerve centres, including the cardiac, than myself.

Sincerely yours,
J. M. Anders.

OBSERVATIONS ON THE X RAY.

By Mr. T. C. McLennan, B.A., and Mr. C. H. C. Wright, B.App.Sc., and T. Keele, B.App.Sc., of Toronto, Canada.

[Special correspondence to the Medical News.]

These observers, after experimenting for some time and obtaining clear negatives from long exposures to the X rays, succeeded in reducing the time necessary for a distinct image, through five folds of black paper, to one second. These results were obtained by covering the Crookes tube with a glass bell-jar. While these gentlemen do not wish to be understood as claiming that this conclusively proves reflection of the X rays, this explanation for the results obtained appears to be the only reasonable one. They found that without the bell-jar a piece of plate-glass placed between the tube and the sensitized plate, and at a distance of 10 cm. from each, acted as an opaque screen; but when the bell-jar covered this arrangement the action on the plate was very distinct immediately below the glass screen. The rays are in this case probably reflected by the bell-jar around and under the glass screen. These observers succeeded also, by this method of concentrating the rays, in locating the point of a needle between the second and third metatarsals in a patient's foot so definitely that the surgeon was enabled by a single incision to remove it. They are now working on the subject of the reflection and refraction of the rays, and they will make a report of their progress to the Canadian Institute at its first meeting in March.

CONTINUED EXPERIMENTS WITH THE X RAY.

[Montreal letter from our special correspondent.]

Montreal, Canada, Feb. 17, 1896.

Professor Cox, of the science department of McGill University, continues to experiment with the X rays. He is somewhat hampered by the difficulty of obtaining Crookes or Geisler tubes. Several of those in stock which were remarkably fine ones were destroyed by using too powerful currents, the connections at the poles having melted out. Some experiments have been made with a view to employing induction and thus doing away with the metallic connections, but they have not yet reached a satisfactory stage. The Rumkorff coil used by Professor Cox is an old one, but apparently a very good one, as it gives sparks ten inches in length. A few days ago a medical student who had been suffering for some years from an injury of the elbow joint submitted his arm to the X ray, when a clear picture of the injury was seen. With this positive diagnosis it is probable that, as in the case of the young man with the bullet in his leg, the medical student will shortly submit to operation for the cure of his injury. One of Professor Cox's assistants yesterday obtained a very fine photograph of an athlete's hand. Each bone and joint shows in a remarkably distinct manner, those in the palm of the hand and wrist being as clearly defined as those of the fingers. The flesh shadow which surrounded the bones in the previous photos is hardly visible in the present picture.

STREET EXPECTORATION.

Denver, Col., Feb. 17, 1896.

To the Editor of The Medical News:

Sir:—I often read with considerable indignation some of the nonsense written and published, after immature consideration, in regard to Colorado.

In your issue bearing date of February 15th, one of your contributors writes that "a person(?) recently returned from Colorado said 'the streets are *fairly slippery* from the expectorations of consumptives who are there for their health.'" Of course the assertion is not your contributor's own, but he gives publicity to it as though he vouched for its truthfulness, and thus another silly lie is started upon a long and malicious career, bearing a certificate of character from the writer.

Medical writers ought to given more careful investigation to such bold statements before accepting and reiterating them.

Colorado physicians keenly realize that our streets are not yet as clean as those of New Jerusalem, nor can they be so until education and refinement have more thoroughly leavened the mass of our population. But I know that our streets compare very favorably, as to freedom from expectoration, with those of New York, Philadelphia, Chicago, Pittsburg, St. Louis, and Detroit, perhaps even with those of Syracuse.

In our street-cars any one who cares to look may see this legend:

Bureau of Health Notice:
Do not spit on the floor,
Because Consumption is Communicated by the Expectoration.

In hotels, lodging-houses, places of public resort, and in many stores similar placards with explanatory, succinct paragraphs are to be found.

Thousands of pamphlets and circulars in regard to the prevention of tuberculosis are distributed to patients by the Bureau of Health, and apartments that have been occupied by consumptives are fumigated by the authorities.

In a word, there exists in Colorado, probably to a greater extent than elsewhere in America, proper offi-

cial recognition of the contagiousness of tuberculosis; and that official action is but the expression of a widespread, general, and intelligent realization by our community (30 per cent. of them consumptives) of the necessity for such care. Very respectfully,

Wm. P. Munn, Health Commissioner.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Monthly Meeting, February 17, 1896.

Joseph E. Janvrin, M.D., President.

THE ULTIMATE RESULTS, IN MY OWN EXPERIENCE, OF VAGINAL HYSTERECTOMY FOR CANCER ORIGINATING IN THE CERVIX UTERI.

Dr. Janvrin made some introductory remarks on assuming the presidency of the Association, and then read a paper with the above title. (See page 225.)

DISCUSSION.

Dr. William T. Lusk said that he believed that he was the skeptic at the meeting of the Obstetrical Society referred to in the paper. At that time he had asked whether any one had ever seen a case of the kind mentioned by the president, Dr. Janvrin, in which there was not a speedy relapse after operation. At all events, there had always been a speedy recurrence in his own cases, and he thought that this was the experience of most operators. He had never been able to gather any very definite information in regard to this subject. When he was in Europe last summer he had spoken to Jacobs in regard to the matter, and the latter had given a very vague reply, but at the same time acknowledged that the results of his cases of vaginal hysterectomy were very disappointing. In London, Knowsley Thornton had spoken in very much the same strain, and the same was true of other prominent gynecologists. On account of the unsatisfactory results that had been met with, Dr. Lusk said that he, as well as a number of other operators, had returned to the old Shroeder method.

In view of these facts, the showing made of the cases presented this evening by Dr. Janvrin was all the more remarkable, and he wished to heartily congratulate the president on the very gratifying measure of success that he had attained. Certainly the operation of vaginal hysterectomy as a procedure was in every way preferable to the Shroeder operation. As performed at the present day, it was attended with the smallest possible amount of risk, and it was much easier to do than the Shroeder operation. As a result of the brilliant success reported here to-night he would take hold of the subject with new interest and zest, and he hoped that in the future he would be able to report results less gloomy than those he had hitherto met with.

Dr. Herman J. Boldt thought that in the future the results of this operation would be much better than they had been in the past. It was very important that the cases operated on should be selected with great care and that the operation should be performed at as early a stage of the disease as possible. Much also depended, he believed, on the technique. Until recently there had been much to condemn in the manner in which the operation was done, but of late years advances had been made. Especially was this true in regard to the use of the cautery, as advocated by Dr. Byrne in this country, as well as some European authorities. When this was more generally adopted, he believed that the results met with would be appreciably better. One great cause of recurrence was that, on account of the condition of the lymphatics, the surgeon was apt to infect some of the sound tissues during the operation, and by the use of the cautery this could be avoided. On the whole, however, he had to confess that up to the present time he had been obliged, by the results obtained, to take very much the same view of the subject that Dr. Lusk did. In conclusion, Dr. Boldt congratulated Dr. Janvrin on his skill in avoiding injuries to the ureters during his operations, as this accident was not infrequently met with by other operators. In connection with his remarks he presented a uterus, in the removal of which the Pacquelin cautery had been used.

Dr. George T. Harrison regretted that he had not been able to get to the meeting in time to hear the president's paper. He said that of all the triumphs of modern gynecology this was the grandest achievement—to be able to remove the entire uterus when the seat of carcinomatous infiltration, and thus save the lives of many women who formerly would have been irrevocably doomed. The statistics which he had gathered on the subject showed that about 17 per cent. of all those operated on were permanently cured. But, Why, he asked, should the other 83 per cent. be allowed to perish? He believed that as soon as it was possible to make a diagnosis earlier in this class of cases, we should have much better results to show. This was a matter of extreme importance, because cancer, we have every reason to believe, was at first a purely local disease.

One great difficulty in the way of improvement in this respect was that women do not appreciate the great significance and importance of atypical uterine hemorrhages occurring, especially in middle life. He therefore thought that every family practitioner should make it a matter of conscience to call a competent gynecologist in all cases of atypical hemorrhage in this class of patients. If, in the majority of instances, an early diagnosis of cancer could be made and the operation be performed as soon as possible thereafter, the statistics would undoubtedly show a very much larger percentage of cures. It could be laid down as a rule that when five years had elapsed after the operation without any signs of recurrence the patient might be regarded as positively and permanently cured. The mortality from the operation itself was a little over 9 per cent.

Dr. A. Palmer Dudley, who was present by invitation, said that he did not think he could add much of value to the discussion. Still, there were some points to which it might be well to call attention. In considering the liability to recurrence in any given case, there were

three prominent circumstances to be taken into consideration, viz.: First, the age of the patient; second, the extent of the disease; and, third, the manner in which the latter was attacked. A woman who was in active menstrual life was much more apt to have a relapse than one who had passed the climacteric. Also, if a considerable portion of the vagina or other surrounding parts had become involved, there was a much greater chance of recurrence than in cases of a simpler character.

Dr. Dudley spoke for some time in regard to the technique of the operation, and said that it was still an open question whether the open method was preferable or not. Personally he believed it was better to secure primary union whenever this was possible, rather than healing by granulation, for the reason that in the case of the former there was less liability of return, and he had frequently observed that recurrence was apt to begin in the seat of the cicatrices left by granulating wounds. There was one advantage, however, he thought, in the use of the clamp, viz., that by this means portions of the broad ligament could be crushed at a higher point than could be reached by ligatures, and without the danger of doing injury to the ureters.

As to the general importance of an early diagnosis, he fully agreed with Dr. Harrison, but he thought it necessary to remember that hemorrhage is not an *early* symptom. Pain, discharge, feelings of discomfort, were the things that should arouse the suspicion of cancer before any hemorrhage appeared, and he was of the opinion that every general practitioner should be able to make an early diagnosis of the disease himself. The time would come, he had no doubt, when this would really be the case, and then we should be able to show much better results than at present. In reviewing his own cases, he had found that the average time of recurrence was from eighteen months to two years, and he thought this was about the average of operators in general.

Dr. Janvrin, in closing the discussion, said that he agreed with Dr. Boldt as to the importance of carefully selecting the cases for operation, and with Dr. Harrison that cancer was primarily, and for a considerable length of time, a purely local disease. While in cases seen early vaginal hysterectomy offered a very excellent chance of permanent cure, in those in which there was a regular cauliflower excrescence, with extensive implication of the vagina or other parts, such an operation was, in his opinion, certainly unjustifiable. In these advanced cases it was sometimes necessary, however, to perform a modified operation (palliative and not radical) for the relief of hemorrhage and pain, and in this way the patient could be often spared much suffering in her declining days.

Personally he (Dr. Janvrin) had never directly closed the peritoneal surfaces, but it was his practice to draw the broad ligament stumps down into the pelvic cavity, on a level with the upper part of the vagina and then apply the gauze tampon, thus shutting off the peritoneal cavity from all raw surfaces below. If he found much difficulty in applying ligatures to the broad ligaments, he frequently combined the use of the hemostatic forceps with the ligatures, sometimes using a half-dozen, and thus hastening the operative work. The forceps were usually removed at from thirty-six to forty-eight hours. In every case reported in the paper the specimen had been examined by a competent pathologist and pronounced malignant, and in several instances a portion of the cervix had been removed prior to the hysterectomy and examined and pronounced malignant. In conclusion, he said that he felt exceedingly gratified that the subject had been so fully and thoroughly discussed by the gentlemen who had had large experience in operative work in these cases.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, February 20, 1896.

Joseph D. Bryant, M.D., President.

The Recent Progress of Treatment in Affections of the Upper Respiratory Tract.

(*a*) *Nose and Accessory Sinuses.*—Dr. F. H. Bosworth opened the general consideration of the above theme, by a paper on the nose and accessory sinuses. He said that among the prominent factors that had been responsible for the progress in this department of medicine during the past fifteen years was the discovery of the local anesthetic properties of cocaine, by Carl Koller. Aside from its anesthetic action, this agent had contributted much to larynology and rhinology by its property of squeezing the blood out of vascular tissues, and so facilitating both diagnosis and treatment. In 1885 had appeared what he considered to be the first paper in which was presented the true physiology of the nasal passages. He had contended that the function of the turbinated bodies was to pour out serum, which was taken up again by the inspired air. A proper appreciation of the important function of the nasal passages made it evident that the important indication for treatment was to restore, or maintain the normal respiratory function of these passages. He did not think the nasal septum had any particular function, and consequently if it encroached upon the lumen of the passages it was proper to cut it away freely. It was now known that a purulent discharge indicated an empyema of one of the accessory sinuses. Ethmoid disease he has found to be frequently accompanied by diseases of the antrum. Both diagnosis and treatment were more definite than formerly.

Dr. M. J. Asch said that in the enthusiasm over the value of cocaine it should not be forgotten that the abuse of this drug had often led to the development of a drug habit almost as baneful as the alcohol or morphine habit. Another danger from cocaine arose from this very important property of temporarily depleting the tissues of blood, for operations done under cocaine anesthesia were sometimes followed by secondary hemorrhage. Although puncture of the inferior meatus in disease of the maxillary sinus had been recommended as a simple method of treatment, he had found that such was not the case, and that owing sometimes to the peculiar conformation of the sinus a puncture through this meatus entirely failed to reach the sinus.

Dr. R. C. Miles said that he could hardly conceive of nasal surgery being carried on intelligently without the

use of cocaine. The nasal septum, in his opinion, was not as useless as Dr. Bosworth seemed to believe; its numerous glands should be enough to refute such a statement. In the treatment of polypoid degeneration of the frontal sinus, he had obtained good results from curetting.

DR. J. W. GLEITSMANN said that he had also met with difficulty in puncturing the antrum of Highmore from the lower meatus with Schmidt's instrument, until Schmidt had called his attention to the fact that the point of puncture should be about three-fourths of an inch posterior; since then he had frequently done it with good result.

DR. BOSWORTH said that he had never met with a case of cocaine habit that had seemed to him much more serious than the chewing-gum habit. In many of the so-called cases of cocaine habit alcohol or morphine was an important factor.

(*b*) *The Pharynx.*—DR. J. E. NEWCOMB read a paper on this division of the subject. Speaking of the best general anesthetic to use for very short operations, he said that there was much evidence to show that the bromide of ethyl was particularly well adapted for this purpose. With this agent the period of excitement is very transient, vomiting is rare, the vapor does not irritate, and there is no tendency to cardiac disturbance or cerebral anemia. Its disadvantages are that it produces hypersecretion, and if too long inhaled may produce muscular contractions. In the production of local anesthesia, it had been found that the effect of cocaine could be prolonged and intensified by mixing it with antipyrine; indeed the hypodermic injection of a 50-per-cent. solution of antipyrine alone had been found sufficient to relieve dysphagia for twelve hours at a time. In the treatment of naso-pharyngeal tumors, the speaker said, the hot snare was not now so commonly resorted to. Electrolysis had yielded good results, but statistics on this point were far from accurate. Metallic electrolysis—*i.e.*, the use of a certain metal for the positive electrode, by which this metal was dissolved by the current and deposited deeply in the tissues—promised good results. When this method was employed, it was customary not to use cocaine, as the operator desired to be guided somewhat by the sensations of the patient. Mycosis was a condition, often dependent upon a rheumatic or gouty diathesis, which demanded the use of antiseptic solutions, or, better still, the application of the electro-cautery.

Enlarged tonsils in persons under sixteen years should be removed by some form of guillotine, but in older persons, or where the tonsils were fibrous, and liable to bleed, igni-puncture was more appropriate. For adults, if the shape of the tonsil permitted, he favored the use of the hot snare. Where the tonsils were acutely inflamed, one of the best internal remedies, according to his experience, was salol, although at the outset a tonsillar inflammation might frequently be checked by the local application of guaiacol. Where suppuration seemed inevitable, one should not wait for the abscess to point, but should resort to early incision.

DR. GLEITSMANN said that he had found that bromide of ethyl possessed the advantages claimed for it in the paper, but it had seemed to him that its anesthetic action was rather too transient for most purposes. He could speak from personal experience of the satisfactory action of a 50-per-cent. solution of antipyrine, hypodermically administered, in certain obscure neuralgic conditions.

(*c*) *Larynx and Trachea.*—DR. D. BRYSON DELAVAN discussed this portion of the subject. He said that intubation was growing in favor as a mode of treating chronic stenosis of the larynx. A new method of treating benign neoplasms of the larynx, and one that bade fair to be exceedingly useful, was the frequent spraying with absolute alcohol. Two cases in his own practice had been completely cured by this simple treatment. In the treatment of malignant disease of the larynx, three recent operations were worthy of consideration. They were: (1) Thyrotomy; (2) complete laryngectomy; and (3) laryngectomy, with removal of involved glands. Dr. J. Solis Cohen's plan of attaching the divided end of the trachea to the edges of the cervical wound was a good one, for it decidedly diminished the chance of inspiration pneumonia, and in several cases so treated there had been quite good phonation. Tracheotomy should precede thyrotomy by several days, and in dividing the cartilage it is well to interrupt the continuity of the incision and form a sort of angular recess, so as to assist in keeping the cartilaginous margins in coaptation after the operation. One of the best methods yet proposed for the treatment of tubercular laryngitis was that brought forward recently by Dr. W. F. Chappell, viz., submucous injections of creosote into the diseased tissue.

DR. ROBERT ABBÉ said that he wished to call attention most emphatically to the fact that operations on the larynx for malignant disease should only be undertaken by surgeons of skill and experience. The only hope of accomplishing much in this class of cases lay in a very radical operation—the removal not only of the neoplasm and the parts evidently infiltrated by it, but also of the neighboring glands. If this were not done, it would be found that owing to the abundant lymphatic supply to the larynx, recurrence would be exceedingly rapid. Feeding after laryngectomy could be accomplished without difficulty by the use of a catheter introduced through the nose. To prevent the passage of blood during the operation into the trachea, he had used a number of small sponges, with strings attached, packed around the common tracheal tube. This had proved much more satisfactory than any of the special devices for this purpose. His experience with laryngeal papillomata had impressed him very strongly with their remarkable tendency to recur after the most thorough excision and cauterization of the parts. He hoped therefore that the new method of treating these benign but very troublesome growths, by spraying with absolute alcohol, would turn out to be all that was claimed for it.

DR. W. F. CHAPPELL said that while the physician must expect to meet with many disappointments in the employment of any method for the relief of laryngeal tuberculosis, recent acquisitions to our knowledge of this subject certainly enabled us to hold out a better prospect of relief than we were formerly enabled to do. Allusion

has been made to his method of treating this condition by injections of creosote. Some of the cases he had treated in this way had exhibited a remarkable degree of benefit, and almost all of them had improved since he had first reported upon them, in March, 1895. Rest was an exceedingly important part of any plan of treating tuberculosis, whether of the larynx or of the lungs.

REVIEWS.

Twentieth-century Practice of Medicine: An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by Thomas L. Steadman, M.D., New York city. In twenty volumes. Vol. VI, Diseases of the Respiratory Organs. New York: William Wood & Co., 1896.

Volume VI of this work, just out and now before us, consists of eight parts by different authors, all of which relate to or have some bearing upon the respiratory organs. The first is by Prosser James, of London, on "Diseases of the Nose." Not only does the interior of that organ receive due attention, but considerable space is devoted to external diseases, including acne, lupus, epithelioma, and even injuries. By placing so much information before the reader in a practical way, the volume is not over large and bulky, though the type is of ample size and clear.

The second part is by Dr. Jonathan Wright, of Brooklyn, N. Y., on "Diseases of the Accessory Sinuses of the Nose," by which he refers to the maxillary (antrum), frontal, ethmoidal, and sphenoidal sinuses. In order to shorten the article the author has, and wisely too, we think, inserted drawings made from specimens rather than occupy time and space by exhaustive anatomical descriptions.

E. J. Moore, M.D., of Bordeaux, contributes the third and fifth parts, the former being on the "Naso-pharynx and Pharynx," and the latter on the "Diseases of the Tonsils." Between these two parts comes a short but practical article on "Diseases of the Ear," by Dr. Albert H. Buck, of New York, though one would hardly expect to find such a subject in a work on diseases of the organs of respiration. Regarding diphtheria-antitoxin, the author of diseases of the tonsils very properly refers to the occasional inconveniences arising from its use as well as the benefits claimed, and states that the method is still being developed.

The sixth part is by Dr. Francke H. Bosworth, of New York, on "Diseases of the Larynx." The reference to the anatomy of the larynx, though brief, is amply sufficient for practical purposes. In fact, throughout the book the author appears to have had in mind what the work professes to be, that is to say, twentieth-century practice. Comparisons are said to be odious, but if we had to pass judgment we should express the opinion that Dr. Bosworth's article is one of the best in the book.

The seventh part is on the "Diseases of the Trachea and Bronchial Tubes," by Sir Thomas Grainger Stewart, of Edinburgh, assisted by Dr. George Alexander Gibson. One need only to read the article on "Asthma" to see how eminently practical and modern are the views held by the authors. In fact, the name of Grainger Stewart alone is guaranty of the soundness of this part.

The eighth and last part in this volume is on "Diseases of the Lungs" (exclusive of croupous pneumonia and tuberculosis), by Winslow Anderson, M.D., of San Francisco, Cal. Pneumonia and tuberculosis will doubtless appear in the next volume, being omitted here on account of the increased size of the book that would be required. Dr. Anderson's article appears to be all that could be required of the author.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 14, 1896, to February 3, 1896.

First Lieutenant Harry M. Hallock, Assistant Surgeon, is relieved from duty at Fort Bayard, New Mexico, and ordered to Fort Logan, Colorado, for duty at that post.

Captain Benjamin L. Ten Eyck, Assistant Surgeon, now at Columbus Barracks, Ohio, is ordered to Fort Niobrara, Neb., for temporary duty.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending January 25, 1896.

January 21.—Surgeon C. A. Siegfried, detached from the "Texas" and ordered to the "Columbia." Surgeon W. G. Farwell, detached from the "Columbia" and placed on waiting orders. Passed Assistant Surgeon J. A. Guthrie, detached from the "Texas" and ordered to the "Katahdin."

For Week Ending February 1, 1896.

January 27.—Assistant Surgeon A. B. Pusey, detached from the "Cincinnati" and ordered to the "Vermont." Assistant Surgeon G. C. Hubbard, detached from the "Vermont" and ordered to the "Cincinnati."

January 28.—Assistant Surgeon C. M. De Valin, ordered to the naval hospital, Philadelphia.

January 30.—Surgeon J. M. Steele, detached from the Torpedo Station and ordered to special duty on the "Independence." Surgeon M. H. Simons, detached from special duty at Portsmouth, N. H., and ordered to the Torpedo Station.

January 31.—Medical Inspector G. F. Windslow, detached from the "Philadelphia" and granted three months' leave. Surgeon J. A. Hawke, detached from the "Baltimore" and ordered to the "Philadelphia," as fleet surgeon of the Pacific Station. Assistant Surgeon A. Farenholt, detached from the "Baltimore" and ordered to the "Monterey."

Official List of the Changes of Station and Duties of Medical Officers of the U. S. Marine Hospital Service for the Month Ending January 31, 1896.

Stoner, G. W., Surgeon. Granted leave of absence for thirty days with pay, and not to exceed sixty days without pay, January 15, 1896.

Pettus, W. J., Passed Assistant Surgeon. Granted leave of absence for thirty days, January 2, 1896.

Magruder, G. M., Passed Assistant Surgeon. Leave of absence extended nine days, January 2, 1896.

Goodwin, H. T., Passed Assistant Surgeon. Granted leave of absence for sixty days, January 4, 1896.

Smith, A. C., Passed Assistant Surgeon. Directed to investigate relative to small-pox in Mississippi and Crittenden counties in Arkansas, January 14, 1896.

THE MEDICAL NEWS.
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ORIGINAL ARTICLES.

THE EARLY DIAGNOSIS OF TUBERCULOSIS OF THE KIDNEY.[1]

BY WILLY MEYER, M.D.,
OF NEW YORK;
PROFESSOR OF SURGERY AT THE NEW YORK POST-GRADUATE SCHOOL AND HOSPITAL; ATTENDING SURGEON TO THE GERMAN AND NEW YORK SKIN AND CANCER HOSPITALS; CONSULTING SURGEON TO THE NEW YORK INFIRMARY.

IN speaking of primary renal tuberculosis I do not, of course, consider the acute invasion of multiple miliary tubercles as it appears in the course of general miliary tuberculosis. What I intend to discuss is the chronic form of tubercular inflammation which primarily affects one kidney alone.

Let me first emphasize the clinical facts which, although still opposed by a few authors, seem to be well established, viz., that this form of tubercular inflammation is always at first unilateral and descends from the one kidney into the bladder (infecting on its way the ureter), and involves in the beginning one side of that organ only; and that considerable time always elapses before the prostate, with the rest of the genital system and the other kidney, becomes affected. In many instances of commencing renal tuberculosis this one organ alone seems to be attacked by the deleterious inroads of the bacillus Kochii, while the lungs, intestinal tract, bones, and joints are absolutely healthy.

Thus it is evident that if we succeed in recognizing and removing the primary local manifestations of a most deadly general disease, it should be considered a triumph of surgical diagnostics and therapy.

With reference to the etiology, the question naturally first presents itself, How does it occur that a solitary tuberculosis develops in one kidney, or, more strictly speaking, in one of the papillæ of the kidney where the primary focus is always found? The answer is, by embolism. Just as we explain the primary tuberculous inflammation, say, of one of the condyles of the femur or of the tibia by assuming an arrest in a terminal branch of the nutrient artery of the respective bone of one or more tubercle bacilli, so the appearance of a primary renal tuberculosis must also be based on that generally admitted pathological fact, namely, that tubercle bacilli are carried with the blood into the different organs. At one time the bacilli enter the right, at another time the left, kidney.

Many may think that in order to have a kidney infected by the entrance of tubercle bacilli a latent tuberculous deposit must exist somewhere in the patient's body; but this is by no means necessary. We all know that every one of us is exposed to the great danger of inhaling—oftener of swallowing—tubercle bacilli. Unluckily this is still a fact, in spite of continuously improved prophylactic and hygienic measures. If the bacilli be swallowed, infection of the intestinal tract does not follow as a necessary consequence. The infecting micro-organism may be absorbed with the chyle and thus enter the general circulation.

Infection by embolism can take place in any part of the body. No doubt it is a rather rare occurrence to have the bacilli carried into one of the kidneys alone, yet it does occur and certainly oftener than has been heretofore accepted by the profession at large. In the majority of cases Koch's bacillus will settle and find a fertile soil in which to grow and multiply—in the kidneys of those individuals only who inherit the tendency to tuberculosis. A healthy organism—by virtue of the vital energy of each cell-body—will successfully oppose the deleterious inroads of the germ, and it is discharged with the natural excretions.

I wish to mention, in passing, the so-called "ascending" tuberculous inflammation as another etiological explanation of tuberculosis of the genito-urinary system. That the prostate and epididymis in rare instances may be primarily invaded by tubercle bacilli which circulate with the blood also must be admitted; but we have not only the right to suspect, nay, since Schuchardt's[1] most interesting observations, we have in our hands proof of the assumption that tubercle bacilli quite frequently enter the urethra with the gonococci, and may thus primarily infect the prostate or epididymis. By a similar route the female bladder also is subject to the same infection. On the other hand, the prostate or epididy-

[1] Read before the Medical Society of the State of New York at its ninetieth annual meeting, January 29, 1896.

[1] *Archiv f. klin. Chirurgie*, Vol. 44, 2; and *Centralbl. f. Chirurgie*, 1892, No. 47.

mis previously attacked by gonorrhœa in one of tuberculous parentage will often be the so-called "*locus minoris resistentiæ*" to tubercle bacilli carried by the blood. It is a matter of fact that gonorrhœa very frequently precedes primary tuberculosis of the prostate or epididymis.

As soon as the tubercle bacillus has gained a foothold in one of the kidneys destruction begins. A tubercle is formed quietly, without local or general manifestations; slowly it undergoes cheesy degeneration and destroys the renal papilla in which it had developed. Up to this time the individual does not feel or exhibit morbid symptoms. Polyuria may occur, but its true significance is seldom recognized early. Finally the cold abscess with its cheesy masses is evacuated into the pelvis of the kidney, and the urine suddenly becomes turbid and mixed with blood. The cheesy masses, passing down the ureter, will produce symptoms of renal colic. If now the physician makes a careful chemical, microscopical, and bacteriological analysis of the urine, the disease *can* be correctly diagnosed at once, but in the majority of cases one is more likely to think of a renal stone as a causative factor than of primary tuberculosis, and very naturally, too, as the trouble generally occurs in patients between the twentieth and fortieth year. Often the urine is very thoroughly examined, but the staining of portions of the sediment for tubercle bacilli is omitted, or the specimens are stained, but the bacilli are not recognized and the correct diagnosis is not reached. The hematuria, which varies in degree, lasts several days and slowly ceases; the pains also decrease in severity; the urine after a while appears clear and macroscopically normal. The attack is now considered over and the patient discharged.

If, at this stage of the disease, cystoscopy is practiced, a picture is sometimes seen which establishes with absolute certainty the diagnosis of primary descending tuberculosis of the urinary system, even if so far no tubercle bacilli have been detected.

As far as I am able to find in literature, the following observation has not yet been described. On viewing the interior of the bladder the cystoscopist perceives an absolutely healthy surface of the vesical mucous membrane and one perfectly normal ureteral opening. The mouth of the other ureter, however, is injected, and a number of circumscribed, clearly defined, inflamed areas of the mucous membrane can be seen between it and the slightly hyperemic trigonum, leaving the interposed tissue unchanged in appearance, and thus one recognizes with marvelous and astonishing clearness the enemy's steps in a hitherto uninvaded field. I could not compare this picture better than to liken it to footprints in the freshly fallen snow. No other disease of bladder or kidney with which I am acquainted presents a similar cystoscopic appearance.[1] Should the microscope fail after repeated observations to confirm a diagnosis made by the cystoscope, it would be well to inoculate a rabbit by injecting some of the sediment into his pleural or peritoneal cavity, or the diagnostic value of Koch's tuberculin might be tried. In a case at Czerny's Clinic, at Heidelberg, the diagnosis was made by this means, tubercle bacilli appearing in the urine only after repeated injections of tuberculin. On account of the injurious effects of these injections upon the general health of the patient, this method is not to be recommended.

It is scarcely possible that the cystoscopic picture described above could result from any other than a tuberculous irritation. Ordinary pus, not carrying specific micro-organisms, which passes the ureter and bladder after perforation, say, of an abscess containing a small renal calculus, cannot leave similar traces. It is not injurious to the epithelial layers of the vesical mucous membrane; and should slowly growing renal tumor rupture into the pelvis of the kidney, simple hematuria would ensue, but no large amount of pus and cheesy deposits would be found.

In many cases, of course, the picture will not be as clear and pathognomonic as described above. I have seen it so far in two cases only. Especially will it be indistinct where, by previous catheterism, sounding, or irrigation, infection has been carried into the bladder—an occurrence which is very frequently met.

In view of this reasoning, the primary use of the cystoscope cannot be too strongly insisted upon.

Up to a short time ago no means of positive diagnosis in such cases was available, but luckily new, ingenious methods of examination and improved cystoscopic instruments brought forward recently have at last fulfilled a dream that for years has occupied the mind of every medical man interested in this class of diseases. I refer to the catheterization of the ureters, which permits of the bloodless, separate collection and analysis of the secretion of each kidney. In the female sex Kelly's excellent, well-known method should be preferred to others, on account of its absolute

[1] In these examinations I place great reliance in Nitze's instrument, and use no other.

asepsis. Here the bladder is filled with air and the catheter introduced into each ureter with the patient in either the knee-chest or recumbent posture. In the male, Casper's new ureter-cystoscope also enables us to insert the tip of a small catheter into the mouth of each ureter under direct guidance of our eyes, and to push it up toward the pelvis of the kidney as far as desired. I have practiced both methods and cannot praise them too highly. Casper's ureter-cystoscope has been in my possession for the last four months, and in three female and five male patients I succeeded easily in catheterizing both ureters and draining off each kidney separately.[1]

One ought to take great care in these cases—besides proceeding aseptically—not to introduce the catheter too far toward or into the pelvis of the kidney, so as to avoid artificial infection of a healthy organ. If the urine of each kidney has been collected, careful analysis of the same will, in many cases, be an invaluable help in establishing a correct diagnosis.

Thus you have seen that at present we have quite a number of reliable means which, if properly applied, enable us to diagnosticate the primary tuberculosis of one kidney, even in its very beginning, in the majority of cases. The great influence of such scientific progress upon our therapeutic procedures is evident. Only extirpation of the diseased kidney will save the patient's life and save him years of more or less severe illness. In view of the sad prognosis of the trouble in question, this operation seems to me to be clearly indicated. To trust in a spontaneous cure of the disease under a general symptomatic *régime* would be by far too hazardous. The possibility of such a spontaneous cure must, of course, be admitted, but it certainly is a very rare exception and so far not upheld by clinical facts.

On the other hand, by extirpation of the kidney, done as soon as possible, the trouble is not palliated, but actually cured. This point cannot be too strongly emphasized.

If patients, and, as I have frequently experienced, the family physician also, will not consent to such a radical treatment at this early stage of the slow but deadly disease, and prefer to temporize, the removal of the diseased organ, even at a later stage of the trouble, may still effect a cure. The important point is not to wait until a tuberculous inflammation of the genital sphere is added to the descending tuberculosis of the uropoietic system—a course which will happen with almost absolute certainty in the male—not to wait until the other kidney is similarly attacked by an ascending process. The operation *then* will only improve, never cure. It should be remembered that infection of the prostate generally sets in early.

Therefore, in cases of the sudden appearance of the above mentioned symptoms, too much stress cannot be laid upon the necessity of establishing a strictly defined diagnosis as soon as possible, and of carrying out that treatment which alone is the logical sequence of the same, to wit, *early extirpation of the primarily diseased kidney.*

[1] I would refer those who are interested in this subject to an article of mine read before the Section in Surgery of the New York Academy of Medicine, November 11, 1895, which will soon appear in the New York *Medical Journal*, entitled "Catheterization of the Ureters in the Male and Female with the help of Casper's Ureter-cystoscope."

THE RESTRICTION OF TUBERCULOSIS.[1]

BY VICTOR C. VAUGHAN, M.D.,
OF ANN ARBOR, MICH.

OF the 63,000,000 people living to-day in the United States, 9,000,000 or more will, unless something be done to prevent it, die of tuberculosis. In the census year of 1890, 102,199 deaths are reported as due to pulmonary tuberculosis, or consumption. To the reported deaths, not less than 30 per cent. should be added in order to arrive at the actual number. When this computation is made, it will be found that the annual number of deaths in this country from pulmonary tuberculosis amounts to nearly 133,000; I know of no reliable *data* from which we can ascertain the number of deaths from tuberculosis of other organs than the lungs. However, knowing, as we do, that every part of the body—the skin, the muscles, the bones, the nervous system, the abdominal and pelvic viscera—are all occasional, and some of them frequent, sufferers from the invasion of tubercle bacilli, we will hardly be accused of exaggeration when we state that in all probability this micro-organism is directly or indirectly the cause of not less than 150,000 deaths in this country each year.

Leyden gives the ratio between annual deaths and the total number of infected persons as 1 to 7, and Williams states that the average life of the consumptive among the better-to-do classes of England is eight years. Accepting Leyden's estimate, we see that an average of 150,000 deaths annually indicates that the total number of persons in this country to-day infected with tuberculosis amounts to 1,050,000, or one out of every sixty of the population.[2] These

[1] An address delivered (by invitation) before the Colorado State Medical Society, 1895.

[2] The census of 1890 is used as the basis of these statements.

figures are probably too small. Germany has a population equal to about three-fourths that of this country, and Leyden stated before the International Congress of Hygiene and Demography, at Budapest, last September, that the number of consumptives in the German Empire is not less than 1,300,000, and that the annual deaths from this disease in the same country range from 170,000 to 180,000. However, the estimates which I have given are sufficiently large to render the subject of the restriction of tuberculosis worthy of the consideration of every one who is interested in the welfare of the human race. It should, however, be borne in mind that unless some effort is made to prevent it, the mortality from tuberculosis will increase with improved facilities for travel and the greater ease with which the consumptive invalid, even in the advanced stages of the disease, mingles with and infects the healthy.

It should be stated that the figures given above include only those cases in which tuberculosis progresses and causes death. The number of persons actually infected is indeed so large that one hesitates to give it. The records of the autopsies show that not less than one-third of all men have tuberculosis during some period of life. Bollinger found tubercular lesions in 27, and Massini in 39, per cent. of all cases examined. In 200 post-mortems made by Harris, and in which special attention was given to the detection of evidences of infection, the results were positive in 38 per cent. In the examinations made at the Paris morgue, the percentage of cases in which tubercular lesions, active or quiescent, are formed is, according to Bouchard, as high as 75. Biggs, of New York, found tubercular changes in 60 per cent. of the bodies examined by himself. In 125 autopsies made at the Foundling's Home in New York, the bronchial glands were found to be tuberculous in all. Even when there are no indications to the eye of tubercular infection, the presence of the germ may often be shown by the inoculation of guinea-pigs; thus, in eight out of thirty cases, in many of which there were no recognizable tubercular lesions, Loomis demonstrated the existence of the bacillus in the bronchial glands by the inoculation of animals.

Tuberculosis is a disease which is frequently arrested in the first stage, but it is also true that it often progresses through the second stage and terminates in death. At first it is due to an unmixed infection. The tubercle bacillus finds its way into the human body, develops slowly, and in a large per cent. of the cases remains but feebly active or dies out entirely, leaving the lesions so frequently observed in the autopsies referred to above. If the information which we get from these post-mortem examinations of the bodies of persons dead from accidental causes, or from diseases other than tuberculosis, be correct, and I see no reason for doubting the authenticity of statements made by so many men skilled in the recognition of pathological lesions, then it must be true that tuberculosis, so long as it remains an unmixed infection, is not one of the most fatal of the infectious diseases. The history of inoculation tuberculosis, which has been accidentally induced in man, confirms this view. The instances in which surgeons, pathologists, butchers, dealers in hides, children circumcised by tuberculous rabbis, and others have been accidentally inoculated with this disease, are observed with sufficient frequency to enable us to know quite accurately the history of the disease when thus acquired. In these cases the disease remains for many years, often through life, a local affection; its progress is slow, and it seldom produces death.

Although the tubercle bacillus can be induced, under specially favorable conditions, to multiply on artificial media, it is in nature an obligate parasite, and does not reproduce itself outside of the animal body. Obligate parasites do not speedily destroy their hosts. It is not conducive to their best interests to do so, because their continued existence depends upon that of their host, or on their transference to another host. This is true not only of the tubercle germ, but of the bacilli of leprosy and syphilis. Furthermore, man is not so susceptible to the tubercle bacillus as some of the lower animals are. A pure culture of this micro-organism will speedily kill a guinea-pig, while, as we have seen, its growth in man is slow and liable to temporary, and even permanent, arrest.

The tubercle germ, unaided by saprophytic micro-organisms, seldom kills. One-seventh of the human race in civilized countries die of tuberculosis; but one-third more are infected with the germ. Therefore, in the difference between one-third and one-seventh, or in nearly one-fifth of all men, the disease is present at some period of life, but does not cause death. Of the 63,000,000 of people now living in this country, 21,000,000 have been, are, or will be infected at some time, but only 9,000,000 will die, of tuberculosis, leaving 12,000,000 who will be infected, but in whom the infection will not progress to a fatal termination.

In the second stage of tuberculosis the disease

becomes one of mixed infection. Other pathogenic, or even saprophytic, germs are carried into the infected tissues, and, finding there a soil rendered favorable to their growth by the previous specific infection, begin the process of tissue disintegration. It is probable that the many causes of pulmonary consumption which apparently have their origin in attacks of influenza and bad colds are explainable in this way. The individuals are already tuberculous, possibly have been so for many years; the acute inflammation of the respiratory tract brings with it or is due to the secondary infection, and for the first time tuberculosis is recognized. The sudden appearance of miliary tuberculosis after measles and whooping-cough is probably another illustration of the same thing. That this is the case in pneumonic phthisis, there can scarcely be any doubt. Indeed, the post-mortem examination often shows bronchial glands which have evidently been tuberculous for a long time. There has been much said and written about a pretubercular stage; there is no evidence of the existence of any such a condition as a diseased state. On the other hand, the tubercles often exist long before the disease is recognized, and in many in whom no lesion of a tubercular nature is suspected until the autopsy reveals it.

That the bacillus discovered by Koch in 1882 is the primary and essential cause of all forms of tuberculosis, no intelligent and well-read medical man will now deny. Without specific infection the disease does not and can not exist. While this germ does not destroy every body which it invades, and probably does not, unaided, produce death in many, without it no amount of saprophytic infection can cause tuberculosis. Bad colds, influenza, pneumonia, measles, and whooping-cough do not originate consumption.

The exhaustive researches of Cornet, extending through the years of 1887, 1888, and 1889, and since confirmed by others, have revealed the manner in which tuberculosis is disseminated. The air exhaled from the lungs of the consumptive, even in the last stages of the disease, is germ-free. The sputum in cases of pulmonary tuberculosis, the discharges from the bowels when sputum is swallowed, and in intestinal tuberculosis, the urine in case of involvement of this excretory tract, the discharges from tuberculous sores on any part of the body, the milk and flesh of tuberculous animals are the media in which the germs of this disease exist outside of man's body. As has been stated, the tubercle bacillus does not reproduce itself outside the animal body, excepting under certain artificial conditions. The number of tubercle germs in the sputum on the floor or in the cuspidor does not increase ; but in its resting or spore form, it may, under certain conditions which ordinarily exist, retain its vitality indefinitely. The consumptive spits on the floor, and then the sputum dries. The housemaid's broom may scatter the contained germs from time to time ; some will settle on the walls, others on the furniture, and still others on the floor again ; her broom and brush may knock them about from place to place, day by day, and she may consider herself a fortunate maid if, sooner or later, the micro-organism does not find its way into her lungs.

As many of you know, Cornet collected dust from various sources, and tested the same for the bacilli of tuberculosis by the inoculation of guinea-pigs. These studies showed that the dust taken from rooms occupied by consumptives who were in the habit of expectorating on the floor or in their handkerchiefs, frequently contained the bacillus; while the dust from rooms occupied by those consumptives who were careful to use cuspidors, and never spit on the floor or in their handkerchiefs, was free from the germ. The baccilli are transmitted from man to man or from animal to man. The disease never originates in any other way. The transfer is, as a rule, an indirect one, and we are often unable to ascertain the route by which it is made, but we know that every case of consumption comes from a preceding one. Tuberculosis is a disease which is largely due to infected houses. Flick has shown this to be the case in Philadelphia. Cornet found that 62.88 per cent. of all the deaths which had occurred in thirty-eight cloisters during twenty-five years was due to tuberculosis. Baer ascertained that from 40 to 60 per cent. of the total mortality in prisons in Germany may be ascribed to the same cause. These figures show what alarming fatality may follow restriction to infected houses and rooms. Cornet calls attention to the fact that the mortality from tuberculosis is greater in those cities where the largest number of people have no homes of their own, but move about from house to house. In this manner one infected house may shelter and destroy the susceptible members of many families in the course of a few years. According to Cornet, the following figures give the annual mortality per 1000 inhabitants from tuberculosis in the cities mentioned:

London	2.9	Paris	4.1	Wiesbaden	2.9
Glasgow	7.0	Berlin	3.8	Liverpool	6.4

He does not claim that the frequent inter-

change of dwellings in the last-mentioned cities is the only cause of the great mortality, but that it is an important factor.

When the consumptive knows how, and properly attends to the thorough destruction of the germs thrown off from his body, there is no longer any danger of his becoming a centre of infection. Residence in a properly conducted hospital, arranged especially for the care and treatment of tuberculous patients, would be perfectly safe. The danger of infection in such a house would be much less than that to which the traveller subjects himself every time he passes a night in a hotel. In the latter instance one is assigned to a room, the condition of the previous occupants of which is wholly unknown to him. The bed may have been occupied by a careless consumptive who has scattered the seeds of the disease about him. Wherever we go, we are in danger of being infected, but if certain well known rules should be followed in detail, the infected and the uninfected might mingle without danger. The bravest man may hesitate to walk through a jungle which conceals a single savage beast, but the timid one does not hesitate to approach a whole menagerie of caged lions. Cornet has shown by positive demonstration that, of all places examined by him, where people congregate, the one most free from the chance of accidental infection is the properly equipped and kept surgical operating-room. Here one is less liable to infection than he is in the open street or in the best kept hotel or in a private house.

Frequently we hear it stated that only the weak and feeble acquire consumption, and the fittest survive. A more heartless, false, and unscientific statement was never made. If a man with a loaded gun should be placed at every street corner, his eyes covered, and then all the inhabitants of the city marched down the street, and the man with the gun told to fire into the procession as it passes, would any sane man say that only the weak and feeble or morally bad would be injured? Every soldier in battle is not killed or wounded, although all may face the fire of the enemy. Of two men receiving like gunshot wounds, one may survive and the other die, but the chances of life are greatly increased if neither is wounded. The tubercle germ may kill one and not another, but it injures more or less every person who inhales it. It may develop rapidly in one, slowly in another. Its growth may be continuously progressive in one, while in another it may be temporarily, and in a third permanently, arrested. While there are undoubtedly differences in susceptibility with like exposure, with no exposure the most feeble and unfit will not acquire tuberculosis, and with sufficient exposure there is probably none sufficiently robust to remain immune to this disease. To this the people of Colorado should give special thought. Your climate has a well-deserved reputation of prolonging the lives of consumptives, and they come to you from various parts of the world. This would be all right, if these living bacteriological culture-flasks were not permitted to scatter their contents about them. Mentone once had the reputation of being a most excellent place for the climatic treatment of consumption, but the invalid visitors coughed and expectorated on the streets and in the houses, until the disease became fearfully prevalent among the native-born. The following quotation is taken from an article by Bennet, who practiced medicine at Mentone for many years, and who, at the time of writing this article, did not believe tuberculosis to be infectious:

"During the last few years phthisis has become much more common at Mentone, among the girls and young women, than it formerly was, especially among the washerwomen, a numerous class; and contagion from the linen soiled by the sputa of consumptive patients has been suggested as the cause. I am disposed, myself, to attribute the undoubted increase of phthisis in a healthful Southern locality to other causes; to the mere change in habits and occupations. When I first settled in this region, in 1859, nearly the entire population was agriculturally occupied. All the young women of a village lying on a mountain-side a few hundred feet above a property of mine were thus engaged, working at the soil with their father and brother, carrying stones and earth in baskets on their heads. They were fine, healthy, robust girls and women, fed on macaroni, olive oil, and wine, worthy to be *matres hominum* (mothers of men). I often had half a dozen working for me in this way, tripping lightly over the rocks and hillsides, heavily weighted. I employed them at that time with some compunction, which I should not feel now. Times have changed; the Grimaldi girls have all become town workers, washerwomen, seamstresses, servants, and they begin to die of consumption. Is it not because they work in close, badly ventilated, damp rooms, instead of in the open air? Is it not again a question of rebreathed air, not of contagion?"

The authorities of Colorado Springs and other health resorts in this State should profit by the lesson taught at Mentone. I do not propose to discuss the relation of climate to consumption; but if I may be permitted, there are a few facts that have been largely overlooked, and which I believe to be important. A given place may be a good one for an infected person to live, and an equally good one for the uninfected to shun. There is no evidence that climate gives immunity to this disease. Acquiring tuberculosis and arresting its progress when once acquired are different things. The best thing to do is to avoid

the former. The place to avoid infection is not where there are no consumptives, because there is no such spot known in the civilized world, but where the consumptive disinfects the sputum and does not expectorate on the floor or in his handkerchief. It is true that it is not a good thing for the consumptive to inhale new supplies of the tubercle germ from time to time. In this way new areas of lung tissue become involved, and the disease extends ; but, as we have seen, the tuberculous person must especially endeavor to prevent the engrafting of a saprophytic infection upon the specific one already established. Therefore, an aseptic atmosphere is the one in which the consumptive should live; and the more nearly aseptic the atmosphere, the longer, other things being equal, is the infected person likely to live. I will not claim that there is no value in altitude, relative humidity, etc., *per se*, but I do hold that an air free from pyogenic and putrefactive micro-organisms is the one where our patients do best, whether it be on the plains of Egypt or on the mountain-tops of Colorado. Dryness of the air is conducive to the alleviation of consumption, because to the extent to which it is dry the air is aseptic. Sunny climes are beneficial, because bright sunshine is a most potent germ-destroying agent, and its effects extend over large areas. The large proportion of cloudless days which you have here in Colorado constitutes one of the valuable features in your climate. The purifying effects of the sunlight are undoubtedly intensified by the rarity of your atmosphere, due to your altitude. No one can deny the value of climate in the treatment of tuberculosis, and all agree that your climate has proved to be of pre-eminent value in its good effects upon this class of invalids.

However, believing, as I do, that saprophytic infection plays so important a rôle in the progress of tuberculosis, I must emphasize the necessity of attending to local sanitary conditions. There is no part of the earth possessed of a climate so salubrious that man may not vitiate its good effects. After some years of experience in advising tubercular patients in regard to climatic treatment, I have come to the conclusion that I will not send any more of them away from home, unless they will promise to place themselves under the care of some physician whom I know will be willing and capable of advising them in the choice of a residence. I believe that a consumptive who lives in a house well ventilated and well drained in Michigan is more favorably located than he would be living in an unsanitary house in Colorado. Of course, if he can be out of doors most of the time he is better off here; but even then, if he must sleep in a small, unventilated, dirty bedroom, it is questionable whether or not it is wise to advise the change. With organic matter to feed upon, and with heat and moisture, saprophytic germs will thrive and find their way into the lungs of those who inhabit the house which those micro-organisms infest.

All of the preceding is the introduction to what I wish to say as to the restriction of tuberculosis. Fortunately for you, however, the prologue is longer than the body and conclusion of my discourse.

Bearing in mind two points which I have endeavored to enunciate, I will proceed. First, however, let me restate these two facts which I believe to be of fundamental importance. They are as follows: 1. Primarily, tuberculosis is, in many cases at least, an unmixed infection, and in this form it seldom proves fatal. 2. When tuberculosis becomes a mixed infection, its natural course is to terminate in death.

We are to restrict the disease by preventing the primary infection. How can this be done? Only in one way, by the destruction of the infecting agent. The places where the tubercle bacillus is found outside of the human body have already been enumerated. We must stop the sale of milk and meat from tuberculous animals. This can be done by the inspection of animals in the dairy and in the stockyards by competent, skilled veterinarians. The experiments of Ernst and others have shown that milk may, and often does, contain the bacillus, even when no local lesion on the udders exists. No one should be allowed to sell milk without a license, and this should be granted only after the employment of the tuberculin test. Whether any part of the carcass of a tuberculous animal should be eaten or not may be regarded as a question yet unsettled, but none of us would like to eat the flesh of such an animal, and there would be no meat famine should it be wholly excluded from the market. Moreover, if this test were universally applied, the spread of the infection among cattle would be greatly lessened, and from an economic standpoint it would pay. I have great confidence in the tuberculin test as applied to cattle. Only a few days ago I saw it tested on one of the finest herds in Michigan, and every cow which gave a reaction revealed at autopsy a tubercular lesion.

The greatest work must be done in the disinfection of the sputum and other germ-containing excretions from the human body. Much good can be accomplished by the circulars now being quite generally distributed by boards of health,

but this agency is insufficient and incomplete. There are details which even the most conscientious and intelligent are not likely to get from the most explicitly worded printed directions, and these details are all important in the accomplishment of our object. When we recognize the fact that we must teach the unlearned and careless as well as the intelligent and painstaking, the inadequacy of printed directions become all the more evident. To depend wholly upon such information would be like teaching chemistry exclusively from textbooks. The most intelligent student cannot become a skilled bacteriologist with the best library on the subject in the world, unless this be supplemented by practical work in the laboratory. If the trained student need such practical demonstrations, how much more must they be essential to the patient, who generally is wholly without scientific knowledge? The surgeon who has no laboratory instruction in bacteriology continues to lose his patients after operations, by neglect of the details of asepsis. How, then, can we expect the factory girl with tuberculosis to carry out the details of the disinfection of her sputum so thoroughly that she will cease to be a centre of infection? Lectures from the wisest, and books by the most learned cannot, unaided by practical work, make successful farmers or mechanics. The details necessary for the complete destruction of the agents of infection can be taught only by practical illustration. Schools for the instruction of consumptives in the methods of taking care of themselves and preventing the spread of the disease to others should be established. This would result in lengthening their own lives, in rendering them more comfortable while they do live, and would save many others from infection. These schools should consist of model hospitals, where the consumptive would be both patient and pupil.

I believe that every State should establish one or more hospitals for the education and treatment of its consumptives. Possibly it would be better if the general government should undertake this work; and by the proper selection of sites, the advantage of climate would be added to other therapeutical measures employed. These hospitals would have a twofold use. The training of its inmates in methods of restricting the disease would be of untold benefit, and it is now generally conceded that the institutional treatment of the disease is the most successful. Only in such institutions can the dietetic and hygienic treatment be carried out satisfactorily, and all will agree that this is of more importance than the use of medicinal agents. At the Falkenstein Hospital for Consumptives it is stated by Leyden that the cures amount to 24 per cent.; and I am sure that this cannot be equalled in private practice, even when aided by the specially favorable climate of Colorado.

But, says one, the experiment which you propose would be, if carried out, an expensive one. This is true, but is it not also true that we are paying heavy tribute to this plague at present? How much loss in money do the 150,000 annual deaths from this disease entail? How great a financial loss will it be to this country when one-seventh of those now living become its victims, many of them after years of sickness, during a larger part of which time they will be unable to earn their daily bread? I will not attempt to name a money value of these lives. The question is above any financial consideration. It is one of the welfare of the human race.

Has anything of this kind ever been done? Yes, fortunately we have a parallel in the method by which leprosy was eradicated from Europe. Hirsch tells us that after the wars of the Crusaders, leprosy became fearfully prevalent all over Europe. Our ancestors recognized the fact that there was only one way of ridding themselves of this plague. At one time, according to the same authority, there were no less than 1900 leper-hospitals or retreats in Europe. The leper must live in one of them. He could go from one to another; but if he traveled by day he was compelled to wear a distinctive garb by which he could be recognized and shunned; and if by night, he must carry a bell, the constant tinkling of which would warn those whom he should meet. Now, by a much more humane method, we can, and our descendants will, I believe, stamp out tuberculosis. In the plan which I propose it would not be necessary for every consumptive to go to such a hospital, nor would it be necessary for even the incurables to remain in these places indefinitely. The intelligent tubercular patient may live in intimate relation with his family, so soon as he knows and will practice the rules necessary to prevent infecting others. There is nothing cruel in the proposition which I made. On the other hand, it has everything to recommend it from a humane and even a sentimental standpoint. A distinguished German writer on tuberculosis has stated that "the healthy should be considered before the sick." I would say that every comfort should be extended to the invalid, and that there should be no suffering in this world which human skill can relieve.

THE POSITION OR POSTURE OF THE PATIENT OURING PARTURITION, WITH SPECIAL REFERENCE TO THE MERITS OF THE WALCHER POSITION.

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In the practice of obstetrics in this country the most of us have become so accustomed to the dorsal position of the patient during the second and third stages of labor that the question is seldom asked, by the average obstetrician at least, whether there is any position which is more advantageous for either parturient or *accoucheur*. Habit enables us all to use with comfort and satisfaction measures and appliances which to others may seem clumsy and ill advised. We are loth to change that which suits us and seems to answer our purpose. Our American women seldom have pelvic deformity to an extent which would prevent delivery by the natural passages, and though it has been asserted by distinguished authority that the average weight of American infants at birth is somewhat greater than that of European infants, even this fact, if it be a fact, does not seem to offer sufficient obstacle to call for radical changes in the present methods of conducting labor. In cases where operative interference becomes necessary, we are accustomed to make use of the lithotomy position, which, while it fixes the pelvis and gives us a basis of support, also diminishes the antero-posterior diameter of the pelvic brim, and hence must theoretically increase the difficulties of delivery. Practically it seldom does; there are few instrumental deliveries attempted, by men of ordinary ability as obstetric surgeons, which are not carried to completion. In view of all these facts, there are many men, of excellent ability in the usual course of obstetric experience, who do not feel the need for the refinements of obstetric knowledge to the same extent as those who practice where pelvic deformities abound. Many physicians, if they acquired these refinements, would forget them in the intervals of their application.

The position with which the dorsal comes most into competition is the left lateral, sometimes called the English, position, which is spoken of with great favor by many of our most experienced obstetricians. It is chiefly applicable for normal, that is, non-instrumental, deliveries, for while instruments of various kinds could be applied in this position they would be used at mechanical disadvantage, and the antero-posterior diameter would be subjected to practically the same conditions of shortening as in the lithotomy position. The only advantages which are claimed for the English position are that the sensibilities of the patient are spared by non-exposure, or supposed non-exposure, of her person during delivery, she is spared the annoyance of being moved about before and after delivery, and it is said the perineum can be better protected against rupture. In regard to the first of these so-called advantages, it is possible to deliver in the dorsal position without exposure; and as to the second, a change to the dorsal position becomes almost imperative if any reparative operations upon the vagina or uterus are indicated after labor is completed, and the annoyance of moving her thus becomes essential. The perineum can be protected in the dorsal as well as in the lateral position.

For myself I prefer to deliver always in the dorsal position unless some objection to that position is offered by the patient.

The proposition has been advanced that if we observe the position of parturients in a social condition which has been uninfluenced by civilization, that is, among savages, or those who were only slightly removed from the animals, we should see the teachings of nature and learn thereby the conditions of position which were most favorable to natural and easy delivery. This presupposes, of course, that nature always impels parturients, in the animal stage of development or the stage which is not remote from it, to assume the position which is most favorable to delivery. As a matter of fact, such a supposition is not correct. Nature does not always direct one to the most favorable position, and even the animals in their experiences in labor would sometimes be benefited if they had the advantage of intelligent advice in regard to the position which they should assume. Among savages we sometimes see the crudest and cruelest attempts to assist nature, which could not fail to produce other than a fatal result to the mother, if not to the child, in any but the most robust physique. In any labor which is at all abnormal, especially if there is disproportion between the fetus and the canal through which it is to pass, the best results must come in those cases in which there is an intelligent understanding on the part of the *accoucheur* of the mechanical principles which are involved in the act of labor and the way in which they are best applied; or in other words, when labor is anything more than a normal physiological act, cultured intelligence is a better midwife than uncultured nature.

Before considering the positions which have

been in vogue in the past, during parturition, it is desirable to recall a few fundamental points, and I refer especially to those cases in which there is no considerable pelvic deformity. The bony pelvis, through which the fetal mass must pass, is not an absolutely unyielding and immovable body—it is provided with a series of joints, with cartilaginous attachments, which, like cartilages everywhere, are capable of more or less distention unless ankylosed by disease. The limit of this distensibility in a given case cannot be specified in advance; it is often greater than is commonly supposed, and this fact is too often ignored in our haste to perform brilliant surgical operations. The following case will illustrate this point:

I was called a few years ago to see a woman in an advanced period of pregnancy, with the view of attending her in her confinement. She was short and deformed, and the antero-posterior diameter of her pelvis so contracted that I could not readily insert two fingers between the symphysis pubis and the promontory of the sacrum. I told her that an operation would be necessary in order to give her a living child, and believed that I had a fine case for cæsarean section. She responded that she had given birth to four living children, all of them being delivered by the breech, and that instruments had never been required. I saw the children, with deformed heads, it is true, but otherwise healthy in appearance. She did not require my services when her labor took place.

Another important point is that the contraction of the uterus, and not that of the abdominal and pelvic muscles, is the essential force in the extension of the fetus; contractions of the latter are often helpful and subsidiary, but they are not the chief factor. A position is seldom essential, however helpful it may be, which brings the abdominal muscles into conditions most favorable to mechanical advantage. On the other hand, it cannot be denied that there often seems to be an advantage in bringing these muscles into play by assuming certain unusual positions. King recently advocated the squatting position as an aid to labor. The analogy from defecation makes it clear that it would sometimes be helpful, especially when the head is near the outlet of the pelvis, and King narrates cases in which by assuming this posture a vicious position of the fetus was converted into a favorable one. It is evident, however, that even this simple expedient would not always be practicable a sensitive woman in the agonies of labor pains would find difficulty in supporting herself and exercising her abdominal muscles, even if she were disposed to make the attempt.

The advantages of position in such an accident as prolapse of the funis must have occurred to all. For this accident the knee-elbow position of the patient and replacement of the cord often serve a most valuable purpose.

Another position for the accomplishment of the same end, which, so far as I know, has not been alluded to by obstetric writers, is the Trendelenburg, and this really anticipates what is to be said in favor of the Walcher position.

In an interesting communication read before the American Gynecological Society in 1880, Dr. George J. Engelmann, then of St. Louis, gave an account, profusely illustrated, of the parturient posture among women of all people, ancient and modern. A careful study of this paper confirms me in the statement already made that it is not safe to conclude that any parturient position is the best and most correct one merely because nature or the custom of unenlightened savages and barbarians has dictated its use. An analysis of this paper reduces the various groups of positions to the standing, the inclined, and the horizontal. In the first, the parturient may be unsupported, supported, or more or less suspended. In the second, she may lie upon a bed or couch of any kind, squat or kneel in varying degrees of inclination. In the third, she may lie upon the back, side, or abdomen.

In all these positions the object which is apparently sought is not merely to facilitate the passage of the fetus through the parturient canal by dilating and straightening it as much as possible, but to mitigate the agony of the process by terminating it as quickly as possible, or by diverting the muscular strain to parts of the body not immediately associated with the parturient act. Those procedures seem best adapted to attain these ends which bring the pelvic joints into the greatest degree of extension—in other words, which lengthen the antero-posterior diameter and render the pelvis as roomy as possible. Of the methods figured by Engelmann, the suspended and the dorsal-recumbent are most effective in this respect. For obvious reasons, the former of these is usually inapplicable. The principle of extension may, however, be borrowed from this crude measure and applied to the recumbent position, and it is the good fortune of Walcher to have recently called the attention of the profession to its importance, more especially as an expedient which would obviate the necessity of symphy-

siotomy in cases in which that operation would otherwise be required.

Let us now turn to the evidence concerning the mobility of the pelvic joints, which will also be found to have a direct bearing upon the assertions of Walcher. In a paper by Matthew Duncan published in 1854 (*Dublin Quart. Jour. Med. Sci.*, 1854, XVIII, p. 60), it was stated that in the guinea-pig there was a separation of the ligamentous tissue at the pelvic symphysis during parturition of an inch or more, which was also accompainied with a relaxation of the tissues of the anterior or inferior portion of the sacro-iliac joint, and more or less freedom of motion. In the cow also, as shown by Barlow (*Edinburgh Monthly Jour. Med. Sci.*, 1854, p. 83), there were enlargement and thickening of the great sacro-sciatic ligaments in the latter part of pregnancy, with lengthening and slackening of the same. This enables the sacral joints to move more freely, the ilia moving freely on the sacrum in an antero-posterior direction analogous to the flexion and extension of the limbs, hence producing enlargement of the genital passage.

These investigations upon animals are of great importance in suggesting analogous changes which must more or less frequently take place in the pelvis of the human female during parturition. But Zaglas had already, in 1851, showed (*Edinburgh Monthly Jour. Med. Sci.*, 1851, Sept., p. 289) that in the human pelvis there is motion of the ossa innominata in an antero-posterior direction; that when the body is erect the promontory of the sacrum is least projected into the brim of the pelvis; that its apex is therefore thrown forward, diminishing the outlet and relaxing the sacro-sciatic ligaments.

Duncan, therefore, feels warranted in saying that in the latter half of pregnancy there is relaxation of the pelvic joints. This statement is confirmed by observations of Mme. Boivin and Chaussier, the former noticing a separation of the pubic bones during parturition to the extent of one inch. Boyer also noticed a separation of the sacro-iliac joint, to the extent of half an inch.

Similar observations were made by Smellie, Diemerbroek, and Denman. Mme. La Chapelle even mentions dislocation of the ilium upon the sacrum during labor; and others have observed simultaneous dislocation of both ilia.

"These alterations in the dimension of the brim and outlet," says Duncan, "by movements of the pelvic joints, are not insignificant, but the reverse, and can be confirmed by every obstetrician of experience." When the limbs are flexed upon the pelvis the outlet of the latter is increased, but the inlet is diminished.

The sacrum may therefore be supposed (Duncan) to have a motion around an imaginary transverse axis, the promontory advancing downward and forward, while the axis moves in the opposite direction, and *vice versa*. In the non-pregnant woman a movement downward of the promontory of two millimetres diminishes to that extent the conjugate diameter of the superior strait, while the apex of the sacrum by a corresponding movement is displaced upward by four millimetres, increasing the tension of the sacro-sciatic ligaments and the dimensions of the inferior strait.

These movements are habitually seen in defecation, but offer the greatest interest in women during parturition. There are raising and lowering of the pubic symphysis, the ossa innominata being mobile upon the sacrum, or, if the latter is considered as mobile, it may be regarded as rotating around an imaginary transverse line passing through its second vertebra. By elevation of the pubic symphysis, or inclination forward of the promontory, the angle of inclination of the pelvis is lessened and the conjugate diameter of the superior strait is diminished by four to six millimetres.

These anatomical investigations and conclusions concerning the variations in the conjugate diameter of the pelvis, according as flexion or extension is practiced, have been confirmed by various observers. Ahlfeld investigated the subject in 1876, and showed that the position of extension (practically the Walcher position) was used in Italy as early as the last century (*Schmidt's Jahrbücher*, 1876, B. 179, S. 185).

Hermann Meyer reached the same conclusion in 1878 (*Arch. f. Anatomie und Entwickelungsgeschichte*, 1878, p. 8). Crouzat, in 1881, found by extension and flexion of the pelvis in cadavers that a variation of eight millimetres in the antero-posterior diameter could be obtained.

Farabœuf, Klein, Walcher, and Jewett have made similar investigations, with practically the same results. I have carefully examined the papers of all these writers, and find their statements harmonious, as above stated. If, therefore, limited mobility is found in the pelvic joints of the cadaver and the non-impregnated woman, much more should we expect to find mobility in the joints of the parturient woman. The statements of Walcher are therefore based upon substantial anatomical facts. Walcher has been considered

an enemy by the advocates of symphysiotomy, especially by Varnier, who wrote a long paper in its defense as compared with the Walcher position ("*Les bassins rétrécis sont ils dilatables sans symphyséotomie*," *Ann. de Gyn. et d'Obst.*, 1894, XIII, 428). That he is the enemy of symphysiotomy is denied by Walcher; but inasmuch as in the five hundred and fifty labors which he annually saw at the maternity at Stuttgart there had been no cases requiring symphysiotomy (one case in 1894 requiring cæsarian section), all parturients with narrow pelvis being satisfactorily treated by means of the position of extension, with possibly the addition of some operative measure less severe than symphysiotomy, he could not be expected to favor the latter, as there is at least the possibility of ankylosis or a movable joint as a consequence, in addition to the danger to life (Morisani, the most brilliant and experienced of all who have practiced it, giving at the Rome congress, in 1894, a mortality of nearly 12 per cent. for both mothers and children).

There is also to be considered the danger to the urethra, bladder, and vagina (*Cent. f. Gyn.*, 1894, p. 584). Walcher's thesis in regard to the position of extension, the so-called *Hangelage*, was made in 1889 (*Cent. f. Gyn.*, 1889, LI, p. 892), and was that the conjugate of a narrow pelvis was not a constant quantity, but might vary according to the position of the woman. If a woman were placed in the dorsal position, the legs flexed on the thighs, and the latter on the body, the body being somewhat elevated, the promontory of the sacrum may be readily reached by the finger in the vagina. In that position the conjugata diagonalis, according to different observers, measures from 9.7 to 10.4 centimetres. If now a pillow be laid under the sacrum and the legs allowed to hang downward, over the edge of the bed or table, as far as possible, the promontory may be felt receding as the knees drop, and the conjugate will then measure 10.5 to 11.6 centimetres. Six observers are mentioned who made a series of measurements under these conditions, and they observed a gain of 8 to 13 millimetres. The knees being again raised and the pillow removed, the original measures were obtained. A gain of 1 centimetre may therefore be obtained in the antero-posterior diameter between extreme flexion and extreme extension; it is sometimes less and it is sometimes much more.

What is the practical application of this fact? This question is best answered by reference to the reports of those who have made use of Walcher's suggestions. Aside from Walcher himself may be mentioned Kalt, Wehle, Fehling, and Dührssen.

Kalt (*Cor.-blatt f. schweiz. Aerzte*, Basel, 1894, XXIV, 652) described in detail three cases:

1. Vpara, 31 years of age; requiring assistance in her first, third, and fourth labors. After a very slow first stage the Walcher position was used for three-quarters of an hour. The head then entered the pelvis, passed the promontory, and 15 mintues later the child was born without further assistance.

2. IIpara, 33 years of age; first labor instrumental. In the second, after the head had engaged, the Walcher position was used, and in one and a half hours a large child was born without further assistance.

3. IIpara, 34 years of age; first labor normal. Labor progressed slowly, a foot presenting. Walcher position, living child born without further assistance.

Kalt concludes, therefore, that the position is useful in generally contracted pelvis, or with a short conjugate diameter, to avoid the high forceps operation or symphysiotomy.

Wehle (*Arch. f. Gyn.*, XLV, 322) reports eight cases, seven of them having a narrow or a flat pelvis. The eighth case was an VIIIpara, in which the Walcher position was used after the head had been delivered, the shoulders being detained; delivery quickly resulted. The position was also used with operations for version, for extraction, for extraction after craniotomy, and for the high-forceps operation after symphysiotomy. It enabled Wehle to deliver with forceps after attempts at delivery in the dorsal position had proved futile. Wehle concluded that the best results from this position were to be obtained with a dilated os and intact membranes.

Dührssen advocates this procedure as an adjunct in operative measures which are necessitated by a short conjugate.

Fehling (*Münch. med. Wochen.*, XLV, 1894, 861) advocates the Walcher position as an adjunct to the expression procedure of Hofmeier, for the delivery of the after-coming head, for high-forceps operations, and in cases in which there is a short conjugate. He so elevates the mattresses that the requisite extension will be obtained with the legs covered in the bed, a modified Trendelenburg posture. He narrates the following three cases:

1st. IIIpara, 28 years of age, with a generally contracted, flat pelvis. Her first labor was a severe instrumental one, the child being born dead. In her second, the position was transverse, version was performed, and a dead child was the result. In her third, a bougie was intro-

duced to bring on labor, this being followed by rupture of the membranes. On the second day there were weak pains, on the third and fourth none, on the fifth they were occasional, and on the sixth they came every ten minutes. From 8 to 12 P.M. the Walcher position was used, at 12.10 the head engaged, the membranes again ruptured, and at 12.40 a living child was born in the first vertical position. The conjugate diameter measured 9.8 centimetres.

2d. IIIpara, 25 years of age, with simple flat pelvis. Pains were intermittent in character for six days, and on the seventh, the os being moderately dilated, the Walcher position was assumed, delivery then resulting after three hours.

3d. Ipara, 25 years of age, generally contracted pelvis. After labor had continued several hours and moderate dilatation had resulted, the Walcher position was resorted to. At the end of five hours there was a decidedly febrile condition of the patient, and delivery was concluded with the forceps.

The authors who have been quoted include all the literature upon this subject, so far as I have been able to find it; and as several of them are men of vast obstetric experience and honorable reputation their indorsement of this contribution to the mechanics of labor may be considered important.

The only discordant voices come from those who seem to fear that in some way or other symphysiotomy will suffer by comparison with this simple and usually harmless procedure.

What, then, are the indications for the use of the Walcher position, and what its objections?

1. Cases of protracted labor in which the dimensions of the pelvis are normal or the antero-posterior diameter is somewhat shortened, the head being above the brim. The patient being placed in the position of extreme extension for an hour or more the pelvic joints may become so relaxed, or the antero-posterior diameter lengthened by the necessary half-inch, that the head will engage and labor be terminated normally or with forceps; the high forceps, version, or symphisiotomy being avoided.

2. Cases in which version, either cephalic or podalic, has been performed, or footling or breech cases. The flat pelvis, the generally contracted pelvis, transverse positions, occipito-posterior positions, are in this category. The cases which were quoted show that in some instances labor will be terminated naturally, and that in others the forceps must be used as an adjuvant.

3. Cases in which some form of operative procedure has already been adopted without success. It has thus far been used after high-forceps operations, version, symphysiotomy, craniotomy, and low forceps, and it will probably be shown to have a yet more extensive field.

The length of time during which this position may be used to advantage depends upon the effect which it produces upon the patient. It has been shown by those who have used it that it may be discontinued and re-employed without disadvantage, and sometimes with positive advantage.

After the legs have been suspended half an hour or an hour, it would usually be desirable to discontinue the position for a time, since it is tedious and may cause interference in the venous circulation of the legs and thighs. After a rest of an hour, the position can be resumed if necessary.

The application of the forceps in this position will probably be found less easy than in the classical lithotomy position. It may be that this difficulty can be remedied by placing the patient in the Trendelenburg position, in which the condition of extension would still be preserved.

The contribution of Walcher to practical obstetrics is certainly a valuable one, and will often prove as useful as it is simple and harmless.

ENURESIS.[1]

By W. F. MARTIN, M.D.,
of Colorado Springs, Col.

Perhaps no minor ailment of childhood is more annoying to parents, and particularly to mothers, than is a persistent incontinence of urine in a child. The degree of severity may vary from an occasional wetting of the bed to a constant dribbling of urine day and night, making of the unfortunate victim an object both foul-smelling and repulsive.

It is not the object of this paper to describe those cases in which some anatomical defect, either congenital or acquired, exists, but rather to briefly speak of the more common causes, and what have seemed to me to be the best methods of treatment.

That heredity has a bearing on this subject is made manifest, not only because occasionally one secures a definite history of similar antecedent trouble in the parents, but especially from the fact of its frequent occurrence in several children of the same parents. Of the constitutional, predisposing factors may be mentioned anemia, tuberculosis, chorea, rachitis, and indeed any disorder which chronically tends to

[1] Read before the El Paso County Medical Society, Colorado, November 13, 1895.

keep the system in a lowered or depraved condition. The importance of securing and maintaining a thoroughly healthy gastro-intestinal tract in this as in so many of the diseases of children should always be borne in mind; for certainly, when by improper or irregular feeding the digestive organs become disordered, an aggravation of any tendency to enuresis is assured.

The local condition should not be overlooked: phimosis, adhesions between the foreskin and the glans penis in the male, and possibly adhesions about the glans clitoridis in the female; also the presence of a vulvo-vaginal catarrh, an anal fissure, or irritation from pinworms, should all be remembered as possible aggravating, if not determining, causes of this malady.

An examination of the urine ought never to be neglected. An over-acid or excessively alkaline state of the urine may alone cause the incontinence; and the possibility of diabetes or Bright's disease, stone in the bladder, or cystitis being present will be remembered, if by a systematic examination of the urine evidence toward any of these diseases is found.

Remote reflex causes have of late years been brought more prominently to notice. The relation between adenoid growths of the naso-pharynx and enuresis has been sufficiently often observed to make it seem probable that in some instances the one somewhat influences the other, or both have some underlying common cause. Epilepsy, of traumatic origin, seemed related to enuresis in one case that came under my notice. Dr. Gould has given us unmistakable evidence of the possibility of eye-strain causing this condition. He cites a number of such cases in the Medical News of December 15, 1894. Perhaps when all such possible causes have been eliminated, we shall have to fall back to that most common of all causes, which for lack of a better name we term the "neurotic diathesis," or an unstable or perhaps an unevenly balanced nervous system.

We must remember, as Money puts it in his work on Disease in Children (p. 380), "the great frequency of incontinence is an excellent illustration of the causes of infantile nervous pathology, that the cord is dominant and cerebral inhibition subsidiary. . . . The child is much more a machine of reflex activities than the adult." We can then see how with a naturally heightened spinal action a slight increase in the usual stimulation given by the urine to the afferent nerve endings at the neck of the bladder, and this continued for a little while, will engender a *habit* of incontinence, especially when, during sound sleep, the normally slight controlling inhibition of the brain is still further lessened.

Prognosis.—The prognosis of these cases as to ultimate cure is fairly good. Most of them will regain control of the bladder at or before the time of puberty, as the domination of the brain, and with it the volition, over the cord and the purely reflex actions, develops.

Some cases, however, do not get well without treatment. To utterly neglect such cases, hoping that, when 13 or 14 years of age shall have been attained, the affliction will be cured by nature, is only in that degree to strengthen a habit which, if the enuresis should not be cured then, will be yet more difficult to overcome. Besides this, many years of most annoying discomfort may be spared, even these self-curative cases by judicious treatment.

Treatment.—The remedy for any one of the local causes which have been mentioned will suggest itself. Phimosis should always be relieved, but I believe that circumcision is not always necessary. Many foreskins that seem irreducible can by steady backward pressure be made to uncover the glans penis and permit the accummulated smegma to be removed, adhesions to be broken, and the parts thus uncovered to be cleaned and oiled. If such a procedure be done once a week for a few times, the necessity for circumcision will be obviated.

I have seen large numbers of children, and many with apparently tight foreskins, but I have never failed to retract the prepuce in any such case when attempted in a child under five years of age. There are many surgeons who hold that circumcision is desirable in children in any case; with such I have no quarrel; but that it must be done necessarily for purposes of cleanliness, I cannot maintain.

A means of relieving these cases which is very commonly neglected is the regulation of the diet. *Tea* and *coffee* are often given to children; and in the larger cities, where beer is so commonly used at the table, not infrequently do we find it given to them also. I have known of one instance where beer was given to a child seven months old. These beverages should be absolutely interdicted. No child under puberty should be permitted to indulge in tea, coffee, cocoa, or any alcoholics. When we consider the pronounced effect that such beverages have on the nervous and genito-urinary systems, we can see how baneful the results of indulgence in them may be. In addition to this restriction of the beverages used,

it is wise, it seems to me, to limit as much as possible the use, by these children (and it were better for all children), of sweets and pastry, such as candies, cakes, pies, jams, jellies, and sugared preserves.

By doing this the stomach and intestines are kept in a better condition, and that important factor which we call the general health of the child is maintained. Of the medicinal agents advanced, nux vomica has not been of advantage in my hands, though advocated by some. In the few cases in which I have tried it, it has seemed rather to aggravate the condition by its stimulation of the reflexes. The bromides, which theoretically ought to be indicated, seem not of themselves to be of much benefit, for while they deaden the activities of the spinal reflex centres, they also deepen the sleep and so lessen the cerebral inhibition. Ergot, when the sphincter vesicæ is the chief delinquent, is certainly of benefit; but as this alone is not commonly the cause, we find more benefit from it as an adjuvant to other means. Phosphorus, while in a sense a nerve food, is rarely indicated for the condition of enuresis alone; but when this state is associated with the general condition of malnutrition which we call rachitis, it is clearly indicated. I have seen one case where this remedy given for the rachitis present was evidently of decided value in relieving the incontinence; for when the phosphorus was temporarily stopped, the incontinence, which had been controlled by it, recurred, to be again controlled by its renewal. Iron and cod-liver oil will be called for only as the system at large demands them. Belladonna or its alkaloid atropine will control most of these cases, if pushed to its full physiologic effect, *i.e.*, to a beginning scarlatiniform rash. This will often require very large doses. To a child 4 or 5 years old $\frac{1}{50}$ of a grain of atropine in divided doses may be given; generally not more than $\frac{1}{400}$ should be the commencing dose. If only nocturnal enuresis exists, the alkaloid is given at bedtime, and increased by giving it oftener, say four and two hours before, as well as at bedtime, until either the urine is controlled or the belladonna rash appears. Bladder control having once been secured, the dose necessary is maintained for some fair period of time (several weeks), and then gradually reduced.

In a few cases, where used by me, beneficial effects seemed to be secured by the use of the fluid extract of sweet sumach (*Rhus aromatica*), given with equal parts of glycerine and water (℥ i of the mixture), three or more times daily, the last dose at bedtime. In those cases that do not tolerate the belladonna well, this should be given a trial.

When the trouble is nocturnal only, the fluids ingested toward night should be strictly limited. The evening meal should be as dry as possible, and no fluids given thereafter. As a consequence the urine will be more concentrated, and probably more acid, yet the gain in the lessened volume and lessened pressure will more than compensate for the increased acidity. It seems to me helpful also in these cases to have the foot of the bed, in which the child sleeps, elevated so that its shoulders shall be lower than its hips, and consequently the urine will collect at the fundus rather than at the more reflexly sensitive neck of the bladder. A small pillow for the child's head is perfectly allowable. As these children generally sleep very soundly the inconvenience occasioned by the position of the bed will scarcely be noticed.

At the time the parents retire, the child (who will have been asleep several hours) should be awakened and urged to empty its bladder. The parents can also learn whether, during these earlier hours of sleep, the child has already wet the bed or not. Generally, it will be found that the incontinence occurs later in the night. The bedclothing should be sufficiently warm, and if the child be prone to kick and toss about at night the bedclothing should be more carefully secured by pinning with large safety-pins to the mattress or otherwise, and the child should be clothed with a single-garment night-dress which encases the feet as well as the body. In this way a chilling of the surface of the body, with consequent proneness to reflex contraction of the bladder, will be avoided.

It is decidedly helpful for these children if once a day they receive a tepid or warm bath, followed by cool or, better, moderately cold sponging quickly applied over the body generally, and especially cold sponging down the spine, followed by brisk rubbing and drying of the body. The atmosphere of the room in which the bath is given, however, should always be warm, else the bath may do more harm than good. In the summer-time, sea-bathing may advantageously take the place of the home bath for older children.

Should the age of puberty be passed without control of the bladder having been secured, a much more serious problem will present itself. Diet, hygiene, and medicine may all fail us then, and why? Because by frequent reflex habit the

bladder has become intolerant of more than a few ounces of urine, and when these have collected the bladder becomes fully distended and empties itself during the night and demands frequent attention during the day. In such cases the bladder must be forcibly but gradually distended until capable of holding an amount commensurate with the age of the patient.

APPLICATION OF X RAYS FOR EXHIBITING INVISIBLE OBJECTS IN MOTION.

BY EDWARD P. THOMPSON, M.E.,
OF NEW YORK.

DR. MCKAY, of the Packer Institute, Brooklyn, N. Y., tested my idea termed a scheme in the *Electrical Engineer*, New York, as to the possibility of exposing upon a fluorescent screen the shadows of invisible objects in motion. We saw in what is conveniently termed a kinetoskotoscope the motion of the bones of the fingers when bent backward and forward, the shadow of the rest of the finger being faint. The result was so successful that I noticed a curious feature which was not known to me before, and that is that the bones appear in an end view to be at the back of the finger, and very thin measured from the back to the front. There is a reason for this, I suppose, in that the inner side of the finger should be more like a cushion, so as to be better able to handle objects. An experiment was also performed consisting in opening and closing a pair of pincers which were absolutely invisible to the eye, but the shadow of the moving parts was clearly visible upon the screen. A chain was shaken back and forth; and the separate links moving relatively to each other were clearly visible. These experiments would prove that with the present condition of the X rays the skeleton of a fish could be seen to move backward and forward in the act of swimming, as well as the skeleton of all small objects while in motion, and performing the functions of life. I think that some of the best objects to be looked at while in motion would be, for instance, a bird, through which the rays so easily pass except as to the skeleton. All youthful forms of life could be examined, very probably, by this means, and the motions exhibited. I have for two or three weeks been trying different kinds of experiments, and I find that certain precautions are necessary in order to obtain the best results. In the first place, it is perhaps necessary to show just how I made my fluorescent screen, because I find that others have tried to make it by crystallizing the chemical barium platino-cyanide from a solution upon a sheet of paper. Others merely pressed the crystals upon a surface like filter-paper. Such screens are of little value, especially as the substance then fluoresces blue, which is nearly invisible, and only shows in spots.

By the following means the results are so excellent and the screen is so luminous that the shadows are clearer than in the X-ray photographs: The cyanide should be powdered to the finest dust possible. Then some of the clearest colorless varnish should be put upon a piece of tracing-cloth, because the same is so strong, and so transparent to the fluorescent light which is produced. The powder may now be mixed very thoroughly and intimately with the varnish, so as to make a homogeneous mass, in quantity sufficient to spread over the cloth to a thickness of about $\frac{1}{8}$ of an inch. This is mentioned because experimenters are likely to make the layer too thin. The reason for powdering the material is to produce a maximum amount of reflecting surface. The object of the varnish is to hold it together, and yet permit the reflected rays of flourescent light to become visible. The varnish should then be dried, but not necessarily perfectly dried. These directions should be followed very closely for good results. The end of the tube which is directed toward the Crookes tube, and which contains the screen, should be covered with photographer's black paper used for wrapping up sensitive plates. Either side of the screen may be directed toward the Crookes tube. A very important precaution is to perform the experiments in a rather dark room. It may be light enough to be able to see objects, but if the room is very light, the eyes are not used to darkness, and therefore the experiments are not satisfactory; but if the room is quite dark, the screen in the closed tube appears immediately, upon putting the eye to the hole in the tube, to be perfectly luminous. It will be more luminous under these precautions than luminous paint which has been held in the sunlight and brought into a dark room; and yet if performed where the eyes are exposed to the daylight the experiments are not so satisfactory. Another precaution is to have the electrical apparatus so arranged that the phosphorescent light from the Crookes tube is steady, which may be done, of course, by means of Leyden jars or other condensers.

My idea of this new use for X rays was conceived and attested on Feb. 1, 1896.

CLINICAL LECTURE.

CARCINOMA OF BREAST.—ACUTE APPENDICITIS.[1]

By CHARLES McBURNEY, M.D.,
OF NEW YORK;
PROFESSOR OF CLINICAL SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS.

CASE I.

GENTLEMEN: The patient upon whom I propose to operate to-day has a carcinoma of the breast. The operation which I shall perform is one, a description of which was almost simultaneously published by Halsted, of Baltimore, and Willy Meyer, of this city. In this operation, not only the diseased, but also the surrounding tissue which is most likely to contain diseased elements, is removed. The operation provides against the thing which is the most discouraging in surgery—*i.e.*, the recurrence of malignant disease after operation. I say it provides against it, and by that I mean that it provides against it as well as this can be done by any known means. I have done about twenty operations of this kind. All of these patients made a good recovery from the operation. One of them has since died from extensive intrathoracic carcinoma. I shall explain the method of operation as I proceed with it. This redness of the skin is not due to the disease, but is the result of the preparatory soap application, the skin of some individuals being particularly susceptible to such irritants. You see that the whole left breast is involved in the malignant disease, but some of the skin appears to be entirely healthy. There appears to be no skin indurations. The axilla contains well-developed, enlarged glands, but these are quite loose. Careful examination above and immediately below the clavicle fails to show any enlarged glands there. The operation, that has been universally done for many years now, has been the free incision including the nipple, the dissecting back of the flaps widely, removal of the entire breast, and the extension of the incision into the axilla and the removal of its contents. This operation was a very great improvement upon those which had been previously done; nevertheless, when the disease has extended into the fascia or muscle, even such an operation must necessarily be very incomplete. In all cases there is a very strong tendency for carcinomatous disease of the breast to follow the lymphatics in certain definite directions. One of these is into the lymphatics of the axilla, and another, and perhaps still more important one, is through the lymphatics of the pectoral fascia. Hence the operation which I propose to do is founded on a most rational basis—the removal of those parts liable to have become infected in the way just described. So far the results of this operation have justified it. The operation is somewhat difficult, and occupies considerable time, but the patients bear it very well. In fat subjects it is somewhat more difficult of performance. In this case the skin around the nipple, while not exactly indurated, has a peculiar "pig-skin feel," and hence we shall be careful to remove it. In making the incisions in such cases we must not be hampered by considering how the wound is to be closed by skin-flaps. If after the thorough removal of all diseased tissue, the skin-flaps can be brought together, well and good; if not, then it cannot be helped; all of the disease must be removed regardless of the mode of closing the wound after the operation. Secondary skin-grafting is most satisfactorily resorted to, to cover any deficiency left at the time of operation.

I begin by including the breast and a considerable portion of the surrounding skin in a large elliptical incision; the two sides of the ellipse unite and extend up into the axilla, and then another incision is made from the clavicle until it meets the first wound. The flaps of skin are to be made as thin as, in the judgment of the surgeon, they may be and still survive. Of course, if they are made too thin, the vitality of the flaps will be destroyed, and they may necrose. The small flap made by the axillary and clavicular incisions is dissected back so as to expose the pectoralis-major muscle. Having now uncovered the entire field of operation superficially, we shall proceed to remove the breast and muscle *en masse*. I prefer to begin from the outside and dissect inward, including the axilla in the dissection. I am now dissecting down to the edge of the serratus-magnus muscle, after which I shall follow the edge of the latissimus-dorsi muscle. On reaching the axilla we must be very careful in our dissection. The best way, I think, is to find the vein first, and then dissect from this point as a landmark. Where it is possible to leave important nerves, such as the one going to the latissimus dorsi and the long thoracic, it is well to do so. I find that it can be done in the present instance, and, as you see, the amount of connective tissue remaining upon them is very minute. There are many venous branches from the axillary vein; we should carefully ligate these with a double ligature, and then divide them between the ligatures so as to save as much blood as possible. I think you can now appreciate the value of this new method of operating, for you can see several large glandular masses infiltrated with carcinoma which, according to the older method of operating, would have been partially concealed by the pectoralis-major muscle. Moreover, if this muscle were intact, the operator would be working in a small and steadily contracting space, so that it is easy to understand that the removal of all diseased tissue under such circumstances is well-nigh impossible. Now, I pass my finger under the pectoralis muscle, and divide it near to its point of insertion without any danger of wounding important vessels. This exposes the pectoralis-minor muscle, which is likewise divided with the finger underneath, protecting the subjacent parts. Having dissected away all diseased tissue from the vessels, and divided the last muscular attachments, we have only to sever the remaining connective tissue, and we can remove all in one piece. Not only have I removed the muscular tissue, but the fascia which lies over the muscles, for this fascia is extremely liable to be the seat of a recurrence of the disease. Those of you who have seen some of these patients will

[1] Delivered at the Roosevelt Hospital, New York, Feb. 15, 1896.

remember that there is no stiffness after the operation, although there is a slight diminution in muscular power—in other words, the anterior fibres of the deltoid enable the patient to carry on all the forward movements of the arm. The wound has been irrigated with normal salt-solution, and has now been rendered dry and clean. Some of these cases can be safely closed without drainage, but as it is impossible to say just when this can be done, I prefer to provide drainage in all cases. It serves to remove what serum and blood may accumulate, and if the tube be removed on the second day the healing process will not have been at all retarded by the use of drainage, while it has furnished an additional safeguard. I find that the flaps will come together, and close the whole wound without difficulty. Having adjusted the sutures and repeated the irrigation through the drainage tubes with the salt-solution, the final step is the application of the dressing. This should consist of a large number of "handkerchiefs" of gauze so applied as to make uniform pressure over the wound. Over this is placed a liberal supply of absorbent cotton, and the whole is firmly held in place by a binder and a number of broad roller bandages.

Let us now make a section of the breast that has been removed. You see here a characteristic carcinoma. It is not very hard, but it represents a rather rapidly growing type of tumor. Section of the axillary glands shows them to be very thoroughly infiltrated with carcinoma. Although, therefore, this operation is long and difficult, and trying to the patient, these objections must have but little weight when compared with the liability of the disease to recur when imperfect operations are done. Dr. W. S. Halsted has had fifty cases, operated upon in this manner, with no death.

CASE II.

This man presents an interesting history. He is 28 years of age, and has never had any abdominal disease before. Last Monday he was seized with some abdominal pain, but he did not go to bed, and there was no fever and no vomiting. He has been going about, though not at work, every day since then (now five days), and he walked into the hospital last evening. At that time he was leaning over to the right side, but he did not make much complaint. His pulse was only 80, and his temperature 98° F., and there was only slight tenderness in the ileo-cecal region. He certainly then did not have urgent constitutional symptoms. At 10 P.M. he vomited, and at midnight he had a chill, followed by a temperature of 101.4°. The pain increased in the iliac fossa. His temperature this morning was 101.4°, and a short time ago 101.6°. You see that the abdomen is not distended, although it is a little more rounded than normal. I find on examination excessive tenderness over the ileo-cecal region, and also a tumor, measuring about 3¼ inches in length. It is close to the outer part of Poupart's ligament, and extends a considerable distance in the direction of the umbilicus. This tumor was not present last evening. One may quite accurately estimate the pathological process that has been going on here. The patient must have had one of two conditions—he either had at the beginning a perforation of the appendix, with a small amount of suppuration, closely hemmed in by adhesions, thus accounting for the slight constitutional disturbance, or else there was originally a suppurating condition inside of the appendix without perforation. One of these conditions must have existed last night at the time of his admission. At the time he vomited last evening, either the pus already there burst through the adhesions, and invaded a fresh portion of the peritoneum, or else the appendix ruptured. Undoubtedly, we have here suppuration, indicated by the presence of this tumor, which has so rapidly formed, and by the signs which have preceded it. The tumor is often formed merely by excessive inflammatory œdema in cases of slowly developing tumor; but where it has formed as rapidly as in this case, you may be very certain that suppuration is present.

In such cases as this, it is well to make the incision pretty well to the outer part of the abdominal cavity. We can then irrigate and dress the part with the greatest ease. If we should approach it close by the side of the rectus muscle it would be much more difficult to treat. I have now divided the external oblique aponeurosis and muscle and the internal oblique and transversalis. I observe that the fascia transversalis is a little thickened by the adjacent inflammation. I cannot be positive, of course, whether suppuration has reached the abdominal wall at this point or not; one can rarely be positive on this point in any case. We shall therefore enter very carefully, for fear of injuring the intestine. I have opened into an abscess cavity, and now feel with my finger a concretion in it. This breaks down very readily, and we find that the nucleus is a pin. The abscess is very thoroughly shut off from the general peritoneal cavity.

I once saw a case of appendicitis occurring in a child of eight years. He was brought to me with a history of inguinal hernia, and he certainly had the signs of it. I operated upon him for inflamed hernia, supposing there was a mass of omentum in the sac which could be tied off. On reaching the sac a tumor about one inch long and three-quarters of an inch in diameter, containing two pins, was found. On dissecting further I found that the tumor was the appendix, which had come down into the inguinal canal. In another case I removed an appendix containing a concretion. When it was placed in water it dissolved, and I found in it four shot.

I have found enough in this case to account for all his symptoms. Shall I now extensively separate adhesions to see if there is anything more, or shall I simply leave this free opening with the confidence that if there is any more pus it will find its way into this opening? There are no indications that pus exists in any other part of the abdomen, and to break down the abscess wall would expose the patient to unnecessary risk, such as the opening up of a considerable extent of non-infected peritoneum and handling it. Without care, the operator may readily make a small break through the abscess wall in a case like the one before us, permitting a loop of fresh intestine to enter the abscess cavity, and this accident might give rise to a fatal peritonitis. The wound we have made here will be kept irrigated and lightly packed with gauze, and will fill up in a comparatively short time.

CLINICAL MEMORANDA.

REPORT OF A CASE OF GONORRHŒAL ARTHRITIS IN A NEW-BORN INFANT.

By ESTHER M. TYRRELL, M.D.,
OF CANTON, O.

DURING the writer's term of service as resident physician in the Maternity Hospital, Philadelphia, the following case occurred:

M. B., colored, aged 21 years, was brought into the hospital in labor, second stage. As there was present then a purulent discharge from the urethra, all possible precautions were taken to prevent the seemingly unavoidable contagion.

The child, a well-developed female, was born, the eyes cleansed after the most approved methods and closely watched, preventive treatment being constantly employed.

The history gotten after delivery pointed to a well-defined case of gonorrhœa of the mother, though no microscopical examination of the discharge was made to verify the diagnosis.

Four days after birth a slight puffiness of one lid, with a scarcely perceptible redness, was noticed, and by evening, though the treatment had been quickened to hourly applications, the eyes were both in an alarming condition. The consulting ophthalmologist was called, and a most vigorous battle for the eyes begun. The lids were enormously swollen, and the slightest pressure would cause the pus to spurt several inches from them.

Four days after the appearance of the ophthalmia I noticed the wrists and dorsum of both hands were slightly swollen, the left being worse. I had them bathed in a hot saline solution, but it was ineffectual, the swelling continuing until it reached from the finger tips to the elbows. The skin of the wrists and forearms was shining and edematous. The child appeared to be uncomfortable, without indication of severe pain, except for a few minutes at a time.

Applications of a 10-per-cent. preparation of ichthyol with belladonna ointment were made and the hands and arms bandaged, the bowels thoroughly opened with calomel (gr. $\frac{3}{10}$, in three doses), followed by sweet oil. Five days later the swelling had disappeared; the eyes in the mean time had yielded to treatment. At the end of three weeks the patient was discharged in good condition, though the ophthalmologist continued treatment daily at the patient's home.

In the *Medical Science Monthly* for January, 1896, is added to the as yet short list of cases of arthritis associated with purulent ophthalmia, one by Hanshalter (*Congrès de Médecine interne de Bordeaux, Revue mens. des Mal. de l'Enfance*, October, 1895).

A CASE OF COMPOUND DEPRESSED FRACTURE OF THE SKULL.

By MARTIN M. KITTELL, M.D.,
OF KINDERHOOK, N. Y.

ON the morning of Nov. 4, 1895, I was summoned to dress a scalp wound. Taking the necessary instruments and dressings I found the man seated in a mill with a cloth bound tightly around the head. An investigation developed the following history: G. W., aged 52 years; strong and healthy, was grinding knives on a small emery-wheel, with a velocity of 3000 revolutions a minute. It broke, and one section of it struck him on the right side of the forehead. He was rendered insensible by the blow for at least 5 minutes, when he regained consciousness and was able to walk into the office, where I found him about 20 minutes after the accident.

He suffered very little pain, was perfectly clear in intellect, had not been and was not nauseated. In fact, there were no symptoms of serious injury.

On removing the cloth I found a gaping wound 2 inches long, about $\frac{1}{2}$ inch wide, $\frac{3}{4}$ inch above the superciliary ridge, running slightly upward and backward. It was bleeding profusely. I sponged the part with a carbolic-acid solution, arrested hemorrhage by torsion, and found by probe and digital examination that the external plate had been driven into the diploë for 1 inch in length by $\frac{1}{4}$ of an inch in width. I carefully removed loose particles of bone and a few grains of emery; could find no exposed surface of the dura, nor could I detect pulsation. The depression seemed to be fully as deep as the thickness of an ordinary frontal bone. In the entire absence of symptoms I hastily decided to cleanse, pack lightly with iodoform gauze, and drain at most dependent part, closing all but that portion with catgut suture. After the usual dressing, he was taken home, and an ice-cap applied. I informed the family of the condition and the possible results, and mentioned to them the matter of trephining, but suggested that with the entire absence of grave symptoms I would prefer to wait until some symptom would suggest or warrant it, which was accepted. The ice-cap was worn for five days, and the wound healed by primary union. There was an entire absence of headache, irritability and fever. In twelve days the patient was at his office attending to business, and up to present writing is free of pain or mental disturbances.

I do not report this case to discourage the heroic plan of treatment in fractures of the cranium, but in the absence of symptoms it is believed that conservative methods should be recommended, rather than add the surgical shock of an operation to that already sustained.

GONORRHŒA OF THE RECTUM.[1]

By J. A. MURRAY, M.D.,
OF CLEARFIELD, PA.

ON the 25th day of March, 1895, the following unique case consulted me for treatment for what she supposed to to dysentery. She gave the following history:

Married. Age 28. Has two children. Always enjoyed good health. No uterine disease. No leucorrhea. Had always been a sufferer from constipation, for which she had, for the past six or seven years, used all the various aperients, laxatives, and cathartics. During the past two years, upon the advice of her physician, she had abandoned them all in favor of copious hot-water rectal injections, which gave her abundant relief.

[1] Read before the Clearfield County Medical Society, January 31, 1896.

For the past four or five days she had experienced great heat, pain, tension, and tenesmus of the anus and rectum, which were accompanied by a profuse discharge of blood and mucus. Complained of being very sore and irritated around the anus. There was some slight elevation of temperature, with some increase in the frequency of the pulse-rate. Urine was scanty and high colored. So nearly did the symptoms simulate those of dysentery that the treatment was directed to that disease. When the patient was seen the next day, all symptoms were increased in severity. Great pain, with constant desire to urinate and defecate. Frequent and copious injections of hot water, starch-water and laudanum were ordered in addition to rectal suppositories of opium, iodoform, and belladonna.

On the following day, which was about the seventh or eighth, counting from the time the symptoms became acute, the pain, tenesmus, and other local symptoms had not abated except when under the influence of opiates. Patient now complained of heat and pain in the vulva and vagina, with increased vesical tenesmus. Upon the development of those symptoms, it occurred to me the disease might be specific in character, and I promptly suggested a thorough examination, to which she readily consented.

The spincter ani was relaxed and there was some protrusion of the bowel. The mucous membrane of anus was highly inflamed and covered with a thick greenish mucopurulent discharge. With difficulty a small speculum was introduced, and the rectal mucous membrane was found to be intensely red and very sensitive. The labia were red and inflamed, and the nymphæ swollen, tender, and painful on pressure, although there was no vaginal discharge at this time. I suspected gonorrhœa, and to clear up the diagnosis I made some cover-glass preparations from the pus taken from the rectal and anal mucous membranes. Placing these slides under the microscope, the field was found to be loaded with gonococci, which confirmed the diagnosis of gonorrhœa. On the following day there was considerable discharge from vulva and vagina, and a microscopical examination of this pus showed it to contain the gonococci in great numbers. From this period there was superadded a typical vaginal gonorrhœa, which ran the usual course.

And now to show that this patient was not a pathic, nor her husband a pederast, I will explain the theory of the source of infection.

After confirming the diagnosis with the aid of the microscope, I explained to her the nature of the disease. Of course she was horrified, and could scarcely be made to believe such was the case, but I had fortified my diagnosis too strongly to admit a doubt. She asked me to call her husband and explain everything to him. This was done immediately, and as he had every confidence in his wife we all turned our attention to finding the cause of the disease. We suspected the servant-girl with being infected, hence her movements were carefully watched. The patient, as previously explained, was accustomed to take her daily rectal injection, which procedure was always carried out in the bathroom, where she kept her fountain syringe. It was soon discovered that the servant-girl made frequent visits to this bathroom, and each time used the same syringe. The girl was taken to task and confessed to having a well-marked attack of gonorrhœa; and naturally we concluded that the lady had infected her rectum by using this syringe shortly after being used by the girl.

When this case first came under observation all the various textbooks were consulted I could gain access to, but I found no literature on the subject, and the conclusion was reached that an important discovery had been made, which prompted the writing of this article. But, before concluding the subject, I examined an old volume of *The Annual of the Universal Medical Sciences*, and saw the subject briefly mentioned in these words, viz.: "Rollet reports one case. Gosselin one. Tardien had never seen one. Boniere has experimented and found it very difficult to inoculate the rectum with gonorrhœal pus; while Requin believes it almost sure to follow pederasty with a person suffering with the disease. Chas. B. Kelsey, the eminent rectal specialist of New York, has had occasion to suspect its presence but once." It will be perceived from the foregoing that gonorrhœa of the rectum is a very rare disease, and its existence even denied by one prominent authority. It is scarcely necessary to add in conclusion that the vaginal inflammation readily yielded to hot alkaline injections, followed by sterilized water and tamponing the vagina with cotton pledgets saturated with a solution of silver nitrate. The rectal inflammation was treated by saline purgations, copious injections of sodium-bicarbonate, and boric acid solutions, starch-water and laudanum, suppositories of opium, belladonna, sulpho-carbolate of zinc, hot poultices and fomentations. The disease of the rectum ran a protracted course and was followed by some patches of ulceration which were subsequently treated and cured by touching them with a solution of silver nitrate, followed by coating them over with stearate of zinc, and an occasional suppository of bismuth and iodoform.

THERAPEUTIC NOTES.

For Hyperidrosis of the Feet.—

℞	Liquor ferri chloridi . .	f ℥ j
	Glycerini . . .	f ℥ ijss.
	Olei bergamottæ . .	f ℥ v.—M.

S. Apply topically with a brush.

—Legoux, *Dtsch. med. Woch.*; *Cblt. f. d. ges. Ther.*, xiv, 2.

For Broncho-pneumonia in Children.—

℞	Sodii benzoatis . .	gr. viii
	Ammonii acetatis . .	gr. xxiv
	Spiritus Vini Cognac. .	f ℥ ij
	Misturæ acaciæ	
	Syrupi simplicis . aa	f ℥ jss.

S. From one-half to one fluid dram every two hours.

—Marfan, *Rev. Internat.*; *Cblt. f. d. ges. Therapie*, xiv, 2.

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SATURDAY, MARCH 7, 1896.

TO REGULATE THE PRACTICE OF MEDICINE IN THE DISTRICT OF COLUMBIA.

A bill for this purpose has passed the lower House of Congress. The Chairman of the committee having it in charge states that it is the result of more than twenty years of attempted legislation in the District of Columbia. The laws of 47 States and Territories have been presented for the use of the committee, for comparison with this measure; and for the first time in many years the different medical societies have reached an agreement as to the necessity for the passage of the bill. There is only one State in the entire Union, which has not a law regulating the practice of medicine and surgery. That is the State of New Hampshire. The District of Columbia is the only other place in the country where the practice of medicine and surgery is not regulated. The effect of the laws in other States is to drive out irregular practitioners, and many locate and practice in the District who would not be tolerated in Virginia, Maryland, or elsewhere. This bill has been carefully considered, not only by the medical societies, and by gentlemen representing the different schools of the profession, but carefully, section by section and line by line, by the Congressional committee, and all are unanimous in the opinion that a measure of this kind is absolutely necessary, and that the bill has been framed in the most fair and comprehensive manner.

BEAUTY AS AN AIM IN MEDICINE.

Do we not often take a too baldly utilitarian view of our mission as physicians? We regard ourselves as chiefly concerned with the sternly practical aspects of life, with a large number of disagreeable and repulsive disease-processes; to rid the body of which, by means often as unattractive as themselves, is our sole aim and duty. "What have we to do with beauty, in any form?" we cry; "our concern is only with health." "And health means working-capacity, efficiency, freedom from pain and disability." Nothing could be more prosaic: nothing less poetic or artistic.

But *is* this all? Have we nothing of the artist-soul about us? no enthusiasm in our work? Is there nothing in the return of health which gladdens the eye as well as the soul, the heart as well as the mind? Have we no right to rejoice in the loveliness which Nature spreads before us daily in her human masterpieces, and deliberately aim at adding to its beauty and deepening its glow by every means in our power? Most surely we have. We are painters in living colors, sculptors in breathing marble; and we can conceive no higher and purer rapture of the creative mood than that which comes to even the humblest ministrant to the welfare of the little ones as he watches the glow of health come back to the cheek, the sparkle to the eye, and the lithe, elastic roundness to the shrunken limbs under his patient and resourceful care.

Beauty is both an important guide and a legitimate aim in our practice, for in nine cases out of ten it is the "trade-mark" of health. "The flower of life is red, is red," as the poet sings. And the coloring of the healthy skin, hair, or eye is warm and vivid; while the tints of disease of every sort—of gangrene, of ulceration, of suffocation, the hues of death and decomposition—are

dull, cold, and ghastly. Filth and famine, pestilence and decay, are alike either colorless or repulsive in hue; while color is an index of purity and wholesome vigor. And this relation is even more constant and necessary in beauty of form. The chief element in beauty of outline is symmetry; and symmetry simply means balance, equipoise, efficiency, and is generally allied with either speed or strength. The second important element is the curve, and the curve essentially denotes elasticity, movement, vigor. A thoroughbred horse can almost invariably be picked out of a mob of ordinary horses, simply by the long and graceful curves of his neck, loin, and quarters and the general beauty and symmetry of his figure. Beauty of form is usually associated with great speed, strength, or intelligence, generally with all three. Among the lower animals this will be readily admitted, but that the same rule holds true of our own species, even in these over-civilized days, will be with equal promptness doubted, if not denied. And yet we venture to assert that a careful study of the elements which make for beauty in the human body as a whole and in its various parts will amply prove this position.

Take the highest form of beauty of which our bodies are capable, the grace of carriage, of bearing, the poetry of motion, and it essentially consists of and depends upon the rippling, springy vigor of muscle combined with the broad, deep chest of good lung-power, the thin flanks of endurance, the wide hips and well-rounded thighs of weight-carrying form, and the straight back held in place by the powerful bow-string of loin-muscles. The woman who possesses the most exquisite charm of a graceful bearing, the man who "carries himself well," will be found possessed of distinctly greater strength, speed, or endurance than his less attractive sisters and brothers of equal weight, age, and training.

As every rational method of pursuing beauty leads to health, ought we not frankly to recognize it as a perfectly legitimate and worthy aim in life in general and in medicine in particular; treat the desire for it as an ally, instead of an enemy? Think of the tortures which women in all ages have suffered for their idea of beauty, and then consider what a tremendous lever in managing our most troublesome cases the recognition places in our grasp! Let us encourage our patients, both male and female, to strive for beauty as well as for health, and they will attain more of both, as Heaven knows they and we need to in this latter end of the nineteenth century.

RECENT PROGRESS IN MEDICINE.

THE TREATMENT OF PERNICIOUS ANEMIA.

Whether pernicious anemia is a special disease or one secondary to a number of exhausting conditions cannot be stated with positiveness. Advocates of the one contention may urge their claims quite as logically as those of the other. Although we have been quite familiar with the histological condition of the blood, as well as with the pathological changes which go on in the hematopoietic organs, in this disease, yet no great advance had been made in the treatment of it until the publication of Professor Frazer's paper on the efficacy of bone-marrow, now nearly two years ago. In textbooks, the disease is usually stated to be a fatal one, and little hope from treatment is encouraged. The special remedial agents which are spoken of are arsenic, phosphorus and transfusion. It is also not uncommon to find it specifically stated that iron is of no value in this disease; the fact is demonstrated that it often does harm.

The drug which has been given with most confidence in the treatment of pernicious anemia, since it was first recommended by Isnord in 1865, and particularly since its claims were urged by Bramwell, several years later, is arsenic. The *rationale* of its use has never been satisfactorily explained from a physiological standpoint. Its efficaciousness in some cases is attested by trustworthy clinicians. It undoubtedly causes an increase in the number of red blood-corpuscles,—in all likelihood by stimulating the activity of the bone-marrow. But how it causes the increase in the constituents of the red blood-corpuscles—that is, in what manner the amount of hemoglobin is added to, unless it be from the food-stuffs—it is impossible to say. As a matter of fact, arsenic often provokes a temporary improvement in the patient which is coincident with this increased output of red blood-corpuscles, but which, if not followed by the administration of iron or sub-

stances rich in iron, is quickly followed by relapse that is generally fatal. There is probably no valid reason why iron in absorbable and non-irritating form should not be of corresponding value in this disease as in other forms of anemia, providing the ability to take it into the system, and dispose of it after it is so taken, exists.

Necessarily the extreme impoverishment of the blood in pernicious anemia prevents a proper secretion of the digestive juices, and rapid hemolysis results in products which stimulate thermogenesis, the result being frequently a considerable degree of fever. These two factors alone are inimical to the absorption and disposal of iron. If, however, iron can be introduced into the blood in very small quantities and in a form that does not irritate the digestive passages, there are very good reasons to believe that it is of no less service here than in other forms of anemia. It seems necessary to emphasize the statement that it does not deserve the stigma of inutility which textbooks and tradition have given to it. It is because most of the cases of this disease succumb, no matter what treatment is used, that the conviction is so widespread.

The results of transfusion, though good results have followed careful use of this form of therapy by many trustworthy observers, have never appeared very brilliant nor convincing in the published reports. Here also the *rationale* of the procedure has never been clear. One advocate will remind us that it supplies the corpuscular element, while another that it contributes necessary serum, while a third may emphasize the fact that it carries into the blood a desirable amount of hemoglobin. To each of these there may be brought very serious objections. In the first place it is the unanimous opinion of physiologists that foreign corpuscles, when introduced, it matters not how carefully, soon die and add nothing to the blood but detritus. If its benefit depends upon the serum, which is almost incredible, there is always some risk of sepsis and other complications which go far to invalidate the small amount of efficacy which this measure contributes to the treatment of the disease.

The use of phosphorus has been almost entirely given up, and very properly so.

When Frazer reported a case of pernicious anemia in which the administration of bone-marrow was causative of such good results that complete cure rapidly followed—a case in which the usual modes of treatment had been most assiduously tried, with failure—it was hoped that this disease had at last yielded to therapy. And although experience during the last two years has not served to substantiate entirely this laudable hope, one does not feel in the presence of a patient suffering from this disease to-day such complete helplessness as he did before the agent was discovered. So many clinicians, like Danforth, Drummond, Barrs, Bigger, Pepper, and Stengel, have seen such startlingly beneficial results in cases which have been apparently quite hopeless, that we can no longer withstand the feeling that this form of therapy is the most potent in the treatment of pernicious anemia. The *rationale* of its use is quite as obscure as that of those which we have previously mentioned. It is the marrow of ox and calf bones that has been used most frequently in those cases where cure has followed. In the chemical examinations that had been made of the marrow and reported, it has been found that in several cases the yellow marrow was quite as beneficial as the red bone-marrow. It is well known that the former is not like the latter a hemopoietic tissue, and the amount of iron which it contains is really almost infinitesimal—as estimated by Stockman, $\frac{1}{56}$ of a grain or less to an ounce of the marrow—while red marrow contains something more than twice that quantity, still a very small amount. Nevertheless if the clinical tests show encouraging results, as they have done frequently in the treatment of these cases, we should have the willingness to continue the treatment until physiological explanation shall follow. That this will be the outcome after a sufficient number of cases have been treated, there can scarcely be any doubt. The conflicting reports that have been made as to the efficacy of bone-marrow may be due, as has been suggested by Pepper and Stengel, to the preparation of the substance which has been used.

In the beginning the raw, unprepared marrow of ox bone was generally the form in which it was administered. Latterly a number of preparations, glycerin extract and other combinations, to palliate the patient's palate and esthesia have

been tried, and it is particularly with these combinations that failure has been reported. It would seem justifiable, after what has been done with the simple bone-marrow, to urge the necessity of making further experiments with this substance, not only in pernicious anemia, but in other forms of anemia, such as chlorosis. Indeed in the latter disease excellent results have been reported by Billings, while at the same time he mentions two cases of pernicious anemia in which bone-marrow entirely failed. Mann has likewise seen good results follow the use of bone-marrow in hemophilia, and in symptomatic anemia, and the writer has in more than one case seen surprisingly beneficial results follow its use in the latter condition. In the profound anemia attending such conditions as anchilostomiasis, in which the parasites produce a substance which causes rapid destruction of the blood and albuminous tissue, it would seem that bone-marrow should be of signal service in promoting hemogenesis—for we do not believe that it has any influence to check hemolysis—while active measures are being taken to eject the parasites from their unnatural habitation. In fact, in a case of this disease recently under observation, it would seem that bone-marrow has contributed very materially in just this way.

If pernicious anemia is a specific form of gastro-intestinal disease, a view which has for its most recent and ardent advocate Hunter (*British Medical Journal*, Feb. 8, 1896), and entirely different to anemia due to the loss of blood and exhausting conditions, for instance, no valid objection can be advanced to the use of bone-marrow in the same way as in the last-mentioned case.

The experiments of Hunter show that there are characteristic changes in the liver, spleen, and kidneys, particularly in the peripheral areas of the liver lobules, which are not produced by the absorption of extravasated blood, but are in direct relationship with the gastro-intestinal tract, wherein the hemolysis begins which is responsible for the pigment. These experiments have been done in such a scientific manner, and the conclusions have been stated in such a logical way, that they carry conviction. They do not, however, suggest a way in which treatment may be more efficacious; for though they may prompt the suggestion that the gastro-intestinal disease is due to some organism, we know practically that treatment of pernicious anemia directed to that end is useless, or nearly so.

Joseph Collins, M.D.

ECHOES AND NEWS.

Long Branch, N. J., is to have a public hospital for contagious diseases.

A bill has just received the signature of Gov. Morton, of New York State, appropriating $6000 for equipping the quarantine boat *Ripple* used in New York harbor, with disinfecting apparatus. It is hoped that this will somewhat improve the very primitive methods formerly used.

Mrs. William Allen, of Pilot View, Ky., celebrated her eightieth birthday the other day by completing the cutting of her third full set of teeth.

A resident of Springfield, Mass., who made the pilgrimage to Denver and was "cured" of a chronic disease by the healer Schlatter, died in a hospital last week as the result of an operation which was made necessary through neglect of ordinary treatment during the time his faith lasted.

Dr. Edward Everitt, of Newark, N. J., died at his home, of malignant diphtheria, supposed to have been contracted in attending two children afflicted with that disease.

The insignia for the Medical Corps of the United States Army have been finally decided upon. It is a modified cross of the Knights Hospitaller—a Greek cross. This is to be seven-eighths of an inch high and the same in width, and to be of dead gold bullion or metal.

Dr. T. T. Thomas, resident physician at Charity Hospital, Norristown, Pa., has been elected to a similar position at the University Hospital, Philadelphia.

Sir James Crichton Brown, the eminent English surgeon, has given the name "anorexia scholastica" to a certain brain trouble which afflicts those young women who "read Lucretius for recreation and cannot boil a potato." Although in itself not a dangerous disease, the sequences may prove serious.

Dr. Floto, of San Francisco, who is 94 years old, is still in the active practice of his profession. He believes that he is the oldest practicing physician in the country.

A London investigator, Mr. J. G. Vine, announces that he has been able to photograph, at one end of a wire, objects exposed between two vacuum tubes at the other end of the wire, and declares that he will soon be able to photograph objects at any distance by means of X or magnetic rays conveyed by wire.

Dr. A. L. Metz has been elected to succeed temporarily the late Prof. Joseph Jones as professor of chemistry and medical jurisprudence in Tulane University, New Orleans, La.

Mr. G. D. Pratt, of Brooklyn, N. Y., has given to the trustees of Amherst College a sum of money sufficient for the building of an infirmary for the use of sick undergraduate students. The work of excavation will begin in the early spring.

A hot spring is reported to have broken forth near No. 326 East Houston street, New York city, which has already acquired great fame among the denizens of the East Side, on account of its curative properties. Surely it could not have selected a more convenient locality at which to deliver its stream "for the healing of the nations," for they are all represented in that vicinity.

The Baltimore Medical Association held its regular annual meeting on the evening of February 24th, and elected the following officers for the ensuing year: Dr. Randolph Winslow, president; Dr. Herbert Harlan and Dr. Joseph T. Smith, vice-presidents; Dr. W. E. Wiegand, corresponding secretary; Dr. Eugene Crutchfield, recording secretary; Dr. C. Urban Smith, treasurer; Drs. H. H. Beidler, E. G. Waters, and John Neff, Executive Committee; Drs. Wilbur Brinton, S. T. Earle and John W. Chambers, Committee of Honor.

One hundred and fifty cases and fifty deaths from yellow fever are reported to have occurred on board the Italian cruiser *Lombardia*, which is now in the harbor at Rio Janeiro, Brazil. Alertness will be required by the quarantine of the Atlantic and Gulf ports to prevent the entrance here of this dread scourge.

All the police force of Lansing, Mich., were in quarantine several days last week, and the police station and town jail were closed during the same period, while the policemen were vaccinated. A tramp with smallpox came to the police station and was passed on to the jail. Practically every member of the force came into contact with the man, and so the force was put in quarantine, and the jail and station-house were closed and disinfected.

It is reported from Elgin, Ill., that the dairymen of that section are considerably alarmed at the statement of Dr. Trumbower, State Veterinarian, that in his opinion 50 per cent. of the dairy cattle thereabout are afflicted with tuberculosis. Of thirty-three cattle belonging to the State Insane-asylum which were submitted to the tuberculin test, fifteen were condemned, and all of them were fat, sleek, and apparently healthy. Five of those pronounced diseased were slaughtered, and tuberculosis was found to exist in a pronounced degree in all. Abscesses as large as a man's hand were found in the lungs, and the lymphatic glands and the lungs were thoroughly permeated with tuberculosis.

Steel-coated rifle bullets for the new magazine guns cause very little pain, says Dr. Delorme, surgeon-in-chief of the French Army. During the riots at Fourmies, France, one man was wounded so badly as to be paralyzed, but did not suspect that he had been shot until he saw blood-stains on his clothing; one, shot through the leg, only felt a slight shiver; another, shot through the arm, felt his elbow twitch and closed his fist mechanically. At short range, 100 to 150 yards, the bullets are apt to explode and do serious mischief.

At the regular monthly meeting of the New York State Board of Health, held at the Hotel Métropole, New York city, February 28th, Dr. F. O. Donohue, the chairman of the Committee on Tuberculosis, presented an exhaustive report on the work accomplished in the way of destroying diseased animals since July 15, 1895. The report states that 527 bovines suffering from tuberculosis were destroyed since the date named; that $12,282.25 have been paid out in awards to the owners of the cattle. The greatest slaughtering of diseased cattle was done in Dutchess county, but many animals were also destroyed in Westchester and Putnam counties. The appropriation last year for the work of the committee was $30,000, but Dr. Donohue says this sum is not enough. The secretary's report stated that there were 900 fewer human deaths in January, 1896, than in January, 1895, and fewer than in the four years preceding. "There was an increase," the report says, "in the mortality from typhoid fever, scarlet fever and measles, and diarrheal disease. There were nearly 600 fewer deaths from acute respiratory diseases and 100 fewer from consumption and nervous diseases." Dr. S. Case Jones submitted a report on the typhoid-fever epidemic in Elmira. There were, between January 3 and 27, 87 cases of typhoid fever reported in Elmira. Seventy-seven cases were in families using the city water for domestic purposes, and the remaining 10 cases were among children who used the city water in the schools. Dr. Jones said that the State Board of Health should enforce the law to prevent the pollution of rivers by sewers, and that the authorities of Elmira should insist that the drinking-water from the Chemung River should be filtered before distribution.

Experiments made with electricity on the toxins of disease by MM. d'Arsonval and Charrin, of Paris, France, show that the effect is to attenuate the toxin, converting it into a useful antidote. The toxin of the diphtheritic and the pyocyanic bacilli was subjected to the physical action of currents of high frequency. The current had no direct influence on the vitality of the microbes themselves, but modified the liquid in which they live so as to render it noxious to them. The action of the current, it is asserted, is not chemical, but purely physical. In twenty minutes a virulent poison can be turned into vaccinating matter. Electricity is to be tried on animals infected with the toxins, to see whether the effect is the same on living tissue.

Experiments on the spreading of disease by burial, made by Dr. Loseuer, of Paris, France, tend to prove that there is little danger of infection from the practice. Carcasses of animals infected with different diseases were

buried as nearly as possible as human bodies would have been. Bacilli of cholera could no longer be found in the remains after 28 days, those of typhoid fever disappeared after 96 days, those of tuberculosis after 123 days, those of tetanus were very virulent after 234 days, but disappeared after 361 days, while the anthrax bacilli continued in full force to the end of the year of investigation. In none of these diseases, save that of anthrax, did the germs find their way to the surrounding soil and water.

The work of the Section on Neurology and Medical Jurisprudence at the coming meeting of the American Medical Association at Atlanta promises to be of unusual interest. The desire has been quite generally expressed to have discussions upon the following topics: The Etiology of Insanity; Expert Medical Testimony in Disputed Mental Cases; Medical Aspects of Crime. An urgent invitation is extended to present papers and records of cases that have a bearing upon these topics, or upon any other neurological or medico-legal subject. Those who expect to contribute papers or reports to this section will greatly facilitate the business of the section by writing at once to the chairman, T. D. Crothers, M.D., Hartford, Conn., or to the secretary, W. J. Herdman, M.D., Ann Arbor, Mich.

The Section on Surgery at the next meeting of the American Medical Association at Atlanta, Ga., will devote special attention to "Surgery of the Cerebro-Spinal Axis and its Bony Encasements." It is urgently requested that all members who have papers or other material bearing, not only upon this, but any subject coming properly within the province of this section, will correspond with Dr. W. L. Estes, secretary, South Bethlehem, Pa., at an early date, giving title and other particulars concerning their proposed contributions.

SOCIETY PROCEEDINGS.

REPORT OF THE LOUISVILLE CLINICAL SOCIETY.

Dr. W. H. Wathen presented reports of the following cases:

PYOSALPINX WITH OVARIAN ABSCESS.

Case 1.—Two years ago a single woman, aged 22 years, consulted me for severe pain in the region of the ovaries and tubes. Examination revealed a fixed uterus with a tumor upon each side connected with the ovaries or tubes. She had been suffering for a considerable time, and gave the history of having been infected with gonorrhœa. Diagnosis of pus-tubes was made and operation recommended.

She passed from my observation and I saw nothing more of her for two years. Recently she was again referred to me by another physician. She reported that after being treated by me she improved very much and thought she was well, occasionally suffering, but had been for the past few weeks suffering very severely in the pelvis, had a constant elevation of temperature of from one to three degrees, with acceleration of pulse. In an examination I found more immobility of the uterus and more extensive involvement of both sides.

She was operated upon, and the tubes found in Douglas' pouch firmly adherent. They were brought up and the tubes and ovaries removed. There is one interesting point to which I wish to call attention. When the adhesions upon the left side, where the largest tumor was situated, were separated, something that appeared to be pus came up into the wound and was wiped away. When the tube and ovary were removed it was found that this was pus and that it came from the ovary, which was full of *foci* of pus, giving it the appearance of a sponge filled with pus. Upon a careful examination of the specimen, it was found that the ovary had become infected, not from the end of the tube, as is usual, but from about the junction of the inner with the middle third, where a very small opening connected the tube with this sponge-like ovary. As the abdominal cavity was not irrigated, I was a little fearful some pus from the ovary might have remained, though I sponged everything away very carefully; but the woman made an uninterrupted recovery.

PYOSALPINX ON LEFT SIDE, WITH TUBE AND OVARY ON RIGHT SIDE HEALTHY.

Case 2.—Patient aged 25 years recently consulted me and was operated upon a few days later. She had been suffering a great deal for the last few weeks, or months possibly, with pain in the region of the ovaries, uterus, and tubes. On one side a very considerable enlargement was found; on the other side the enlargement was not so great. The abdomen was opened and the tubes found to be firmly adherent. One side was badly diseased with a pus-tube, which was removed; on the other side, although the adhesions were equally as extensive, the tube was found to contain no pus, and the ovary normal, so they were not removed, and the woman may bear children.

ANTERIOR VENTRAL FIXATION AFTER REMOVAL OF A SUBPERITONEAL PEDUNCULATED MYOMA.

Case 3.—Operated upon to-day, neither ovaries nor tubes were removed. The patient was referred to me a few days ago, diagnosis of pyosalpinx having been made. The uterus was fixed in a retroverted position and the ovaries and tubes were adherent in Douglas' pouch. It was impossible to say whether the tubes contained pus or not, but it was easy to see that the woman was suffering with peritionitis and that an operation ought to be performed. When the abdomen was opened the adhesions were found extensive, binding the uterus, ovaries, and tubes, but were not difficult of separation, and the tubes and ovaries were found to be nearly healthy. A small fibroid tumor about one inch in diameter was removed from the fundus of the uterus. The uterus was sutured to the anterior abdominal wall by two silk sutures introduced through the peritoneum on each side and through the sides of the uterus near the fundus, and tied between the peritoneum and the muscle, so that they were buried when the abdomen was closed. Another suture was introduced through the fundus of the uterus and brought out through the abdominal walls and tied over the abdominal wound just as any other suture that closes the abdominal incision.

This woman, I think, will be entirely relieved and be able to bear children.

DISCUSSION.

Dr. W. C. Dugan: What do you think was the cause of the pelvic peritonitis?

Dr. Wathen: I think it was the result of an abortion, because from the history she gave me I infer that she had an abortion some months ago; the septic matter did not pass, I am sure, through the tubes, but must have gone through the lymphatics to the peritoneal structures.

Dr. Dugan: I do not fear pus-tubes as I formerly did, nor as I do pus from an appendicular abscess. I think the pus is often innocuous, and when left in the cavity will not cause any trouble. I am not surprised at all that Dr. Wathen had no peritonitis following the operation where pus escaped into the cavity, for it is well known that if pus, at first of a very virulent form, has been retained for a long time, the pus-forming organisms will die and the pus become innocuous. This undoubtedly explains why we do not have peritonitis following the escape of pus into the peritoneal cavity, and I think the Germans are right in not subjecting these patients to irrigation, that used to be so common with operators in this country. The time was when this patient would have been flooded with gallons of water; and where we subject these patients to so much irrigation there is very apt to be more or less septic matter introduced in the same way, and the patients do not do as well as when treated as Dr. Wathen has described. The pus contained in pus-tubes is not, as a rule, virulent; and careful sponging in such cases is better than irrigation.

Dr. T. P. Satterwhite: What are the statistics with regard to stitching the uterus to the abdominal walls for the cure of retroversion? Furthermore, if it is successful, would this not also relieve procidentia?

Dr. Wathen: The operation for ventral fixation of the uterus, if performed correctly, should be almost without exception primarily successful. There is no reason why it should not be, and it is practically devoid of danger. Further, the uterus will remain, in nearly every instance, permanently fixed. Dr. Howard Kelly, of Baltimore, who has probably done more of this work than any other operator, shows that many women have become pregnant after ventral fixation, have carried the children to term, and have been relieved afterward, the uterus ascending properly, and, when involution had been completed, remaining in its anterior position.

Ventral fixation is an excellent means of curing patients having procidentia, if the uterus is not too large. In these cases it is best to amputate the neck of the womb as high as we can; and if the vagina is much dilated, with a cystocele or a rectocele, or both, anterior ventral fixation should be preceded by an operation upon the vaginal wall that will narrow it and bring it nearly to the normal size.

In doing an operation for anterior ventral fixation I always scarify the uterus and the peritoneum that comes in contact with the uterus, to insure more perfect adhesion. I think scarification is advisable in all cases, though cases have been reported where union was firm without it. I have failed to secure adhesion in one case, which I attributed to the fact that I did not properly scarify the surfaces.

Dr. Louis Frank: Take, for instance, the patient operated upon to-day. If this woman subsequently becomes pregnant, what will become of the suture, and what effect will the suture have upon the course of the pregnancy?

Dr. Wathen: There should be no effect upon pregnancy; what becomes of the suture I do not know—it may be absorbed, or it may remain intact. When the uterus ascends it must carry the adherent peritoneum along with it to a certain extent, and, this being true, the fact that the suture is buried in the peritoneum and the uterus, it would not be disturbed in its relation to these two structures. Experience, however, has shown that these buried silk sutures do no harm. I would prefer to have a buried silk suture to a buried silkworm-gut suture in the event the woman became pregnant.

Dr. Frank: I want to say a few words as to ventral fixation for the cure of retroversion, with the occurrence of subsequent pregnancy and after results in these cases. I have read with a great deal of interest, especially since the last discussion upon ventral fixation before this society, all the literature upon the subject. Dr. Howard Kelly's statistics I have not seen. So far I have been able to find the report of but one case, I think by Edebohls, where pregnancy has occurred after the operation of ventral fixation, the uterus subsequently returning to its natural position.

The after result in these cases, I think, is of the greatest importance. It strikes me that these adhesions between the visceral and parietal peritoneum must become stretched as a result of pregnancy; then with the occurrence of subinvolution at any future time the uterus would necessarily go back to its retroverted position. The trouble is that the original cause of the displacement is still present. What results Dr. Kelly has obtained in this connection I do not know. Edebohls' case, which was exhibited, did not show any relapse. This case was certainly cured.

There is no question but ventral fixation, as well as a properly adjusted pessary, will mechanically cure retroversion by fixing the uterus in a position where it cannot again fall back. In both, however, the cause of the retroversion is not removed, so that if there is any stretching, which sooner or later in pregnancy, it seems to me, must occur to some extent, then during involution the uterus would fall back. They are not cures, in the proper sense.

As to the buried suture: I can hardly agree with Dr. Wathen that these sutures when put in this way will remain in place. It strikes me that they must pull out. The parietal peritoneum does not during pregnancy ascend along the anterior abdominal wall as the uterus ascends; and when the uterus rises, as it does, above the umbilicus, the sutures must pull out, or the adhesions be torn. This, it impresses me, must be the ultimate result, unless the sutures pass from the lower portion of the body of the uterus instead of from the fundus or sides of the organ.

As to ventral fixation for the cure of prolapsus of the uterus, I agree that if there is a prolapse of the vagina, this must be cured first. There is frequently a laceration of the perineum resulting in a retrocele, and also a cysto-

cele with this prolapsus uteri, which must be cured, and the lacerated surfaces also remedied. The condition in such a case is very much like any other hernia, it being in fact a pelvic hernia, and would necessarily be the most difficult of all to cure by ventral fixation. I think intra-abdominal pressure, the cause primarily of the operation, must necessarily sooner or later, if we rely exclusively upon ventral fixation, force the uterus down where it was before.

The operation recommended by Freund holds the uterus in position very well; I do not believe, however, that it is a desirable operative procedure. It certainly cannot be successfully done in women who expect to bear children. I would like for Dr. Wathen to bring out these points a little more fully.

Dr. Wathen: In prolapsus uteri we almost invariably find, as Dr. Frank has suggested, either a partial rupture of the perineum, or a perineum that has lost its resisting power because of pressure; and in addition to this a prolapse of the anterior or posterior vaginal wall, or of both. The vaginal tissues are generally thickened, so that this additional weight helps to maintain the procidentia. The uterus in nearly every case is much enlarged and elongated; only recently I measured a uterus that was freely prolapsed, and found it six inches in length. In a case of this kind if we simply perform ventral fixation, with no support from below, we will find that the adhesion will gradually give away and the uterus with the vaginal wall will again become prolapsed. But if we operate upon the perineum and vaginal wall, and neck of the uterus if indicated, then perform at the same sitting, or on a subsequent occasion, ventral fixation, we will cure nearly all of these patients. I have cured a great many cases of complete prolapsus by amputating the neck of the womb, and by removing a portion of the vaginal wall (either anterior or posterior), or by removing both posteriorly and anteriorly a portion of the vaginal wall. I operated upon a woman by this method several years ago, two months after birth of a child, removing a section of the vaginal wall posteriorly and anteriorly. The patient had a protrusion as large as two fists. She has had no recurrence of the trouble. So I say that many cases of complete prolapsus may be cured by perineal and vaginal operations, supplemented by amputation of the neck of the womb.

Dr. Dugan: The question raised by Dr. Frank does not seem to have been answered by Dr. Wathen—*i.e.*, Does the uterus go back to its retroverted position after pregnancy? It has been known that, in a woman having a retroverted uterus, becoming pregnant and being delivered at term, the uterus permanently returned to its normal position. This is easily understood.

Dr. Satterwhite: I may have misunderstood Dr. Wathen's description of a lacerated or deficient perineum as being one of the causes of procidentia. If this be true, then I would like to know how to account for many cases of prolapse where the perineum is intact. If the perineum is intact then it certainly should withstand the pressure from above and prevent the uterus coming out. I do not see that the perineum has one iota to do with preventing or causing prolapse of the uterus; it is the ligaments of the uterus and reflexion of the peritoneum that hold the uterus in its normal position; and if the ligaments are capable of being stretched to allow the uterus to ascend as it does during pregnancy, I do not see why it may not also descend sufficiently to allow complete procidentia regardless of the resisting power of the perineum. I remember this subject came up many years ago in a meeting of this society, and, from my anatomical knowledge of the subject, I took the same ground then—that the perineum had little to do with supporting the uterus. Dr. Gill Wylie in a published article takes the same view.

Dr. Wathen: In cases where the uterus, vagina, and all the generative organs are in a healthy condition, I would say the perineum has nothing *directly* to do with supporting the uterus. But where there is a rupture of the perineum, associated with rupture of the superficial, middle, and deep layers of fascia, the support that holds the anterior vaginal wall intact is destroyed, and the rectum falls forward, resulting very soon in a rectocele that forces down the posterior vaginal wall, causing it to dilate more and more and become thickened and lose its tonicity; so that instead of the vagina furnishing support to the uterus, as it certainly does in a healthy condition, it does by its weight tend to pull down the uterus, gradually retroverting it and finally causing prolapse. When the perineum and fascia are destroyed, the vagina is put in such a condition that it does not return to its normal dimensions, and gives no support to the uterus; in fact it tends to draw the uterus down; but with the perineum intact, and the vagina in a healthy condition, being held posteriorly against the rectum, anteriorly against the bladder, and latterly attached to the pelvic structures, it does not aid materially in holding the uterus in its normal position, which is conducive to complete involution of the uterus and broad ligaments.

For these reasons it is necessary, in all cases where the perineum has been torn, to repair it in cases of procidentia; but the restoration of the perineum will do practically no good unless we restore abnormal to normal conditions.

OBITUARY.

Dr. Nelson Fanning, Sr., who died at his home in Catskill, N. Y., Thursday, February 27th, was one of the oldest physicians in the United States. He was in active practice until within a few days of his 88th birthday, and had been continuously a medical practitioner for 66 years. In the war of rebellion he served nearly two years as surgeon of the 134th New York Volunteers.

Dr. Smith Ely, for many years a leading physician and surgeon in Newburg, N. Y., died February 28th, of heart disease. He was 68 years old. He studied medicine in New York, London, and Paris, and was graduated from the Vermont Medical College.

Dr. Laughton McFarlane, professor of surgery at the Toronto University, died February 29th, of blood-poisoning, contracted while amputating the toes of a patient at the General Hospital a week previous. He was 54 years of age.

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ORIGINAL ARTICLES.

THE INDICATIONS FOR ALEXANDER'S OPERATION.[1]

BY DR. PAUL F. MUNDÉ,
OF NEW YORK.

SINCE I performed my first Alexander's operation, on December 12, 1884—the first, I believe, done in this country—I have so often had occasion to express my views on this operation and to mention my growing experiences with it, that I scarcely feel that I can now add anything new to what I have already said and written on the subject. My riper experience, which now comprises 97 cases, confirms my previous observations and makes me a stronger believer than ever in the value of Alexander's operation for properly selected cases. What these cases are—that is, what are the proper indications for the operation?—seems to me perfectly clear. The indications are based on clearly drawn lines and are substantially the same as those originally formulated by Alexander. Briefly stated, they are the following:

1. Retroversion or retroflexion of the uterus of long standing where pessaries either do not maintain the uterus in position, are not retained, or cause pain.

2. Retroversion or retroflexion of long standing, associated with relaxation of the uterine supports (ligaments, pelvic floor, and vaginal walls) and consequent greater or lesser *descensus uteri*.

3. *Prolapsus uteri et vaginæ* where the Alexander's operation is preceded at the same sitting by trachelorrhaphy or amputation of the cervix, and is followed by anterior and posterior colporrhaphy and perineorrhaphy.

4. The desire of the patient to be *cured* of her displacement, a wish which no pessary or other non-operative treatment can fulfil.

5. The necessity for keeping the uterus in its normal anteverted and elevated position after the adherent fundus uteri and appendages have been loosened and restored to their normal mobility, either by bimanual tearing of the adhesions or by peeling the organs loose with the fingers through an incision in the posterior vaginal pouch and Douglas' cul-de-sac.

[1] Read before the Section on Obstetrics and Gynecology, New York Academy of Medicine, February 27, 1896.

If the adhesions are broken without opening the cul-de-sac the uterus and appendages *may* be kept in the normal position and prevented from again becoming adherent by a sharply curved lever pessary. But when the cul-de-sac has been opened, only Alexander's operation, or one of the other surgical procedures by which the fundus uteri is kept elevated or anteverted, is practicable. Packing the posterior vaginal pouch with gauze would scarcely suffice to attain this object.

The *counter-indications* for Alexander's operation are:

1. Adhesion of the uterus or appendages.

This is an absolute and positive counter-indication for Alexander's operation.

2. The possibility of retaining the uterus and appendages in a normal position and of making the patient perfectly comfortable with a pessary, unless, of course, the patient insists on a *cure*, as already mentioned.

3. *Prolapsus uteri et vaginæ* of the second or third degree—that is, with the cervix down to or out of the vaginal orifice—unless the plastic operations referred to (anterior and posterior colporrhaphy and perineorrhaphy, and reduction of the weight of the uterus by trachelorrhaphy or amputation of the cervix) are performed at the same sitting. It is asking too much of the round ligaments to expect them to support the weight and traction of a large uterus and the vaginal walls, with bladder and rectum, without assistance from the inferior supports of these organs.

There is one objection to Alexander's operation, and that is, not the difficulty of finding the ligaments—for with the possible *very* rare exception of their absence (if, indeed, that occurs at all) or of their not following the usual course, they can *always* be found—but the impossibility of knowing beforehand whether the ligaments will be strong enough to be of actual service in suspending the uterus. That is a chance we have to take. There certainly are a number of cases (scarcely ten per cent., in my experience) where the ligaments are not much thicker than a large knitting-needle, and break when strong traction is made on them, or are too thin to be of much use. This is the only objection I know against Alexander's operation. The mortality, in

my hands, has been *nil*. I have seen no hernia occur in the scar; only once temporary irritable bladder, and no other evil results.

A number of my cases have borne children afterward, some several, and the uterus has retained its normal position. In two cases of prolapsus (a bad indication) and in one of retroflexion the displacement returned, each time after childbirth. I have been informed of several of my cases which were seen by other physicians, where the retroversion had returned, and one case of inguinal hernia has been reported to me. But I think I am safe in claiming that of my 97 operations (several of which are still too recent to warrant conclusions) 87 were permanently cured.

I prefer Alexander's operation to ventral fixation: because it is safer (at least I claim that opening the peritoneal cavity can never be *entirely* free from danger); because it is more logical and rational to substitute a normal position of the uterus for an abnormal one, that by again putting that organ in an unnatural position as is done by sewing the fundus to the anterior abdominal wall; because shortening the round ligaments does not interfere with the progress of gestation, as I have known to be the case after ventral fixation in one of my 12 cases of the latter operation; and finally because, after ventral fixation, if the abdominal walls are thin and relaxed they are drawn inward and downward by the steady traction of the uterus, and the displacement returns. This remark applies chiefly to cases of prolapsus.

I am opposed on theoretical grounds to Mackenrodt's vaginal fixation, because it substitutes for a movable retroflexed uterus an immovable anteflexed one. However, I have of late heard of good results from this operation in the hands of an entirely unbiased surgeon, and may be convinced in time that it is not as illogical as it has appeared to me to be.

In Germany, the birthplace of this operation, its popularity seems already to be on the wane. Leopold, of Dresden, on Dec. 9, 1895 (*Centralbl. für Gyn.*, Feb. 8, 1896), pronounces against it in favor of ventral fixation on very much the same grounds on which I base my disapproval; and in the same number of the *Centralblatt* I find an article by Rühl, of Eibach-Dillenburg (a to me unknown, but certainly rural, locality), who boasts of 235 Mackenrodt operations (*sic*, in a country practice), but feels, in candor, compelled to report: five cases of dystocia following the operation performed by himself; three of difficult version; one of perforation, and one of forceps, the two last only after incising the anterior lower segment of the anteverted uterus, both children being dead. In all cases the extreme anteversion of the uterus, and the difficulty in reaching the external os in the sacral excavation, together with a firm cicatricial ring in the anterior segment of the uterus, were the causes of dystocia. Besides, Strassmann and Graefe each report a case of cesarian section, after Mackenrodt's operation, made necessary in consequence of the above-mentioned obstacles to delivery.

I do not think that any such objections can be advanced against Alexander's operation, or even against ventral fixation.

THE INDICATIONS FOR VENTRAL FIXATION OF THE UTERUS.[1]

By GEORGE M. EDEBOHLS, A.M., M.D.,
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Recent literature, or, more correctly speaking, events reported in the recent literature, have greatly modified the indications for the several retroversion operations. The discussion of the relative merits of these operations must now be carried to a higher plane than that of mere technique and of immediate and remote anatomical results. Their greater or less interference with the functions proper of the uterus, child-bearing and childbirth, constitutes the higher standard by which they must be judged.

Let us first, then, review the evidence now in as regards pregnancies following vaginæ-fixura uteri, ventri-fixura uteri, and shortening of the round ligaments, the three operations under discussion this evening.

1. *Pregnancy following vaginal fixation of the uterus.*—Strassmann[2] has recorded the following disturbances of pregnancy: (*a*) Disorders and pain in the vaginal cicatrix (Dührssen, 6 cases). (*b*) Abortions; 25 per cent. at least in Dührssen's cases; over 27 per cent. in his own. (*c*) Vesical pain and disturbances of micturition. The literature of the past few months records the following serious complications and disasters of parturition: 1. (Strassmann.[3]) Transverse presentation; prolapse of funis; very difficult version due to abnormal conditions established by vaginal fixation; severe post-partum hemorrhage; rupture at site of cicatrix. 2. (Strassmann.[4]) Delivery per

[1] Read before the Section on Obstetrics and Gynecology, New York Academy of Medicine, February 27, 1896.
[2] *Ges. f. Geb. u. Gyn. zu Berlin*, Oct. 25, 1895.
[3] *Ibid.*
[4] *Ibid.*

vaginam impossible; cervix above promontory of sacrum and pointing upward; Porro operation; rupture of vagina; death from intraperitoneal hemorrhage 1½ hours after operation. 3. (Graefe.[1]) Transverse presentation; cervix above pelvic brim and directed upward; version impossible; cesarian section. 4. (Wertheim.[2]) Version rendered necessary, as well as exceedingly difficult and dangerous, by same conditions as in Strassmann's and Graefe's cases. 5. Rühl[3] reports 235 vaginal fixations performed by himself, with 12 subsequent pregnancies. In three of these the vaginal fixation necessitated version, which was performed successfully for mother and child. The remaining two required bloody incision of the vaginal cicatrix, and one of them craniotomy in addition, before delivery could be effected, the second child also being lost.

The three things common to all of the above cases were: the abnormal position of the cervix above the pelvic brim and pointing upward, the undue expansion and dangerous thinning of the posterior uterine wall, and the firm fixation of the immensely hypertrophied anterior wall in the pelvis, the latter condition constituting the obstacle to delivery. These conditions are all, beyond question, chargeable to the vaginal fixation: I have purposely refrained from citing other disturbances of pregnancy attributed to vaginal fixation, the interpretation of which might be open to doubt. In the discussion following the reading of Strassmann's paper other cases of serious disturbances of pregnancy and parturition were brought to light, and anxiety was expressed for the ultimate fate of the already numerous victims of the yet young operation. Bockelmann estimated that there were in Berlin alone about one thousand women with the dire possibilities of vaginæ-fixura gestation and delivery ahead of them. In New York there are perhaps two hundred such unfortunates. Who will dare to add to their number? With the evidence now in, I would neither perform, nor sanction in consultation, vaginal fixation *in a woman liable to future pregnancies*, with one possible exception only, to be mentioned later. Dr. Vineberg, in a paper on "Conservative Surgery upon the Uterus and Adnexa by the Vaginal Route," read a few evenings ago, cited 42 cases in point, in 34 of which he performed vaginal fixation in retreating from his conservative attack upon the uterus, tubes, and ovaries. In view of recent developments regarding vaginæ-fixura pregnancies shall we hope, or shall we not, that the conserved organs will functionate in these 34 cases? A literature on the pathology and treatment of vaginal-fixation pregnancies has already sprung up (Strassmann, Wertheim, Rühl).

Mackenrodt, the originator, or, perhaps more correctly, one of the originators and chief champions, of vaginal fixation, has formally disowned the operation, for the reasons just recorded. Unfortunately he has already adopted another unpromising child, *vesico-fixura uteri*. The only novelty about the latter operation is that Mackenrodt, and Staude before him, performed it per vaginam, while Werth in 1894, Pryor,[1] and more recently Westphalen, and perhaps others, have operated from above.

2. *Pregnancy following ventral fixation of the uterus.* — Milaender[2] has collected 54 confinements at term after ventral fixation, with 11 difficult labors—4 forceps, 2 cesarian sections, 2 podalic versions, 2 transverse presentations, 1 foot presentation. Of the whole number of pregnancies after ventral fixation, 74, collected by Milaender, 6 terminated in abortion, 3 by premature delivery, 10 were still pregnant at time of report, and 1 died. The death, however (one of my own cases), which was due to long standing valvular heart disease, occurred suddenly on the eve of confinement, and had absolutely nothing to do with the ventral fixation. Strassmann[3] reports two further cases of difficult labor after ventral fixation. Norris[4] reports a case in which the thickened uterine wall at the site of the ventral fixation proved an obstacle to delivery, rendering necessary cephalic version, with high Tarnier forceps, and resulting in the death of the child. Noble[5] asks for a collective investigation, stating that he has had some recent unfortunate experience concerning the influence of ventral fixation upon parturition.[6] My personal experience is negative as regards disturbances and difficulties of pregnancy and parturition following, *and the result of*, ventral fixation of the uterus. I have performed the operation 73 times. In 34 of these cases both ovaries and tubes were removed, 6 were unmarried, 7 over 40 years of age, leaving 26 patients more or less liable to pregnancy. Eight of these 26 have become pregnant with the following re-

[1] *Monatsschrift f. Geb. u. Gyn.*, Vol. II, No. 6.
[2] *Centralbl. f. Gyn.*, 1896, No. 2.
[3] *Centralbl. f. Gyn.*, 1896, No. 5.

[1] New York Obst. Soc., April 18, 1893.
[2] *Zeitschrift f. Geb. u. Gyn.*, Vol. XXXIII, No. 3.
[3] *Loc. cit.*
[4] *Am. Gyn. and Obst. Jour.*, Feb., 1896, p. 149.
[5] *Ibid.*, p. 213.
[6] In the discussion following the reading of this paper, Dr. Noble stated that in a case of pregnancy after ventral fixation he was obliged to do a Porro during labor at term, being unable to deliver *per vias naturales*. The woman died from sepsis antedating the Porro operation.

sults: One produced a miscarriage upon herself at the second month; one died of heart disease on the eve of confinement.[1] A third case died near term, septic from retention of a dead fetus aged 7 or 8 months. Drs. Hanks and Coe, under whose care the patient was delivered, inform me that her condition and death bore absolutely no relation to the previous ventral fixation. Five of the 8 cases, finally, were safely and easily delivered of living children at term, one of them by forceps. All were head presentations. The abortion and the two deaths in my cases are not attributable in any way to the preceding ventral fixation. Certain anomalies, however, have been common to all of my own cases and to many reported by others, of pregnancy following ventral fixation. I refer to the thickening of the uterine wall at the site of fixation, and the ballooning or compensatory dilatation of the posterior uterine wall. In a general way it may be said that, in pregnancy following ventral fixation, that part of the uterine wall anterior to and below the point of fixation thickens, while that part posterior to and above that point dilates, with the growth of the product of conception. The liability to abortion and disturbances of pregnancy and parturition after ventral fixation depends, theoretically at least, a great deal upon the particular technique adopted. The recent modification of the operation adopted by Kelly, who stitches the posterior uterine to the anterior abdominal wall, seems particularly illogical and unfortunate in this respect.

3. *Pregnancy after shortening of the round ligaments.*—A slight drawing pain beginning with the eighth month of pregnancy, and attributed, whether correctly or not, to traction upon the shortened ligaments, has been noted in a few cases. Beyond this, disturbances of pregnancy or parturition, *due in any way to the operation*, have not been observed in the numerous instances of conception following shortening of the round ligaments.

Applying to each of the three operations the crucial test of interference with the normal course of subsequent pregnancies, then, in accordance with the evidence above submitted, vaginal fixation must be discarded altogether in women liable to future pregnancies, ventral fixation must be viewed with strong distrust, while the results of shortening of the round ligaments will alone bear close scrutiny. I have dwelt thus long upon this, which to my mind is *the* important aspect of the question, as it leads logically and unavoidably to two principles or propositions which cover a great part of the subject before us for discussion this evening:

1. Vaginal fixation of the uterus should never be performed *upon a woman liable to future pregnancies*, under any conditions, when ventral fixation or shortening of the round ligaments will meet the indications just as well or better. Personally, I have been guilty of only one vaginal fixation. This was performed upon a young girl suffering from adherent retroversion of the uterus, with normal tubes and ovaries. Ventral fixation was attempted, after separating the adhesions, and failed, as the fundus could not be brought up to the anterior abdominal wall, on account of firm fixation of the cervix by parametritis posterior. I closed the median incision and immediately shortened the round ligaments, hoping that measure would suffice to keep the fundus forward. A pneumococcus infection of both inguinal wounds caused both ligaments to slough and the uterus again fell backward. A few months later I performed vaginal fixation, with the result of relieving my patient of her symptoms, and of keeping the uterus, if not in ideal anteversion, at least in front of the promontory of the sacrum.

2. Neither vaginal fixation nor ventral fixation should be performed *upon a woman liable to future pregnancies*, for the cure of an uncomplicated retroversion of the uterus. This rule is subject to one exception only: In performing the operation of shortening the round ligaments one of the ligaments may tear close to or out of the uterus. Under these conditions the abdomen should immediately be opened in the median line and the uterus sewn to the abdominal wall, ventral fixation being the lesser of the two evils when compared with leaving the uterus held forward by but one round ligament. I have three times performed ventral fixation under this indication. The same indication for ventral fixation holds good if the shortened round ligaments should slough after operation, and the uterus as a result again falls backward.

The above rules are based upon the assumption that shortening of the round ligaments is in every respect the most physiological operation for cases of uncomplicated retroversion, with no adhesions of uterus, tubes, and ovaries. I am quite free to admit that an anatomical cure of retroversion can be obtained by each of the three operations—vaginal fixation, ventral fixation, and shortening of the round ligaments—in from 90 to 100 per cent. of cases, by a proper technique and

[1] Case alluded to above and reported in Trans. New York Obst. Soc., Nov. 21, 1893, and April 17, 1894.

a capable operator. Mackenrodt figures 10 per cent. of failures for vaginal fixation. Kellogg, who has probably had the largest individual experience in shortening the round ligaments, writes me: "I have done the operation a few more than five hundred times, and have had failures or partial failures in less than 5 per cent. of the cases." My own experience, embracing over one hundred cases, tallies with this. In ventral fixation there is no reason why the average operator should not obtain from 95 per cent. upward of anatomical cures. The quality of the cure, however, is an entirely different matter, especially to the patient. After a successful shortening of the round ligaments the physiological mobility of the uterus remains unimpaired. In pregnancy the shortened round ligaments undergo evolution and involution with the uterus. The more successful, however, a ventral or a vaginal fixation, the greater the abnormalities established within the patient's abdomen or pelvis. It is repugnant to every surgical instinct to create unnecessary adhesions within the peritoneal cavity.

An indication for ventral fixation that may be allowed by some, is inability of the operator to perform the operation of shortening the round ligaments. Others again will not admit this, and contend that in that case the surgeon should either learn how to do the operation or send his patient to some one who can. Personally, in view of the evidence now in in favor of the operation, I consider it the duty of every one claiming to be a specialist in gynecology to make himself master of some method of shortening the round ligaments outside of the abdomen. Though Adams, one of the originators of the operation, said: "The operation is one that all and sundry cannot perform," I think that, with a knowledge of anatomy and a little practice upon the cadaver, any surgeon capable of doing a Bassini operation for the radical cure of hernia should be able to shorten the round ligaments successfully. Others have encountered the same difficulties and have mastered them in one way or another. Kellogg, after having performed 28 operations after Alexander's method, writes: "I am sure that had I not adopted a new method of performing the operation I should have felt it my duty to cease its performance." Kuester had abandoned the operation twice, when, stimulated by the examination of a successful case of Werth, he tried a third time and has become one of its most enthusiastic advocates. Mundé records his discouraging first experience, but with the courage of his convictions he persevered and mastered the operation. The writer himself gave up the operation after five more or less, generally less, successful cases, and only resumed it six months later, after he had elaborated in the dead-house the technique of his method of shortening the round ligaments.

Another, and to the writer's mind a very important, indication for ventral fixation of the uterus is as an adjuvant in the performance of combined operations for the cure of prolapsus uteri et vaginæ. It is in just these cases that I have derived the most unalloyed satisfaction from the operation, the necessary plastic work upon uterus, vagina, and perineum being supplemented by ventral fixation performed at the same sitting. I have performed ventral fixation upon this indication 16 times. Two of the patients became pregnant, and were safely delivered at term. Both remained cured of their former complete procidentia of the uterus and vagina when last seen, one four months and the other a year after confinement.

Another broad indication for ventral fixation of the uterus is as a closing procedure after operations upon the adnexa of such a character that the possibility of future pregnancy is excluded, as, for instance, when both ovaries and tubes are removed, the uterus being left. This indication will but rarely obtain with those who advocate and practice removal of the uterus whenever both tubes and ovaries must go. Those of us, however, who are not quite so radical, but who sometimes leave a uterus under these conditions, should make it a practice to attach the fundus to the abdominal wall in closing the incision of the latter. Without added risk we thereby insure permanent anteposition of the uterus.

Nearly in line with this indication is the performance of ventral fixation after operations in which tubes and ovaries, or at least one tube and ovary, are left, the uterus being unusually heavy. There is an unwillingness in some quarters to trust to shortening of the round ligaments to hold a heavy uterus forward. Personally, I am convinced that any uterus which is so heavy from chronic metritis that the shortened round ligaments cannot sustain it, had better be removed; and conversely, experience has taught me that uteri of even twice the normal weight are readily and permanently held forward by properly and *sufficiently* shortening the round ligaments.

We come now to a doubtful field, that of the operative treatment of adherent retroverted uteri, with appendages in good or fair condition. This

territory has until within the past few years been conceded to ventral fixation. In the course of time, however, various operators, the writer among the number, have learned how to deal successfully with this class of cases by applying to them shortening of the round ligaments. An incision is first made into the peritoneal cavity either through the posterior vaginal fornix or through the anterior abdominal wall, and all adhesions of the uterus, tubes, and ovaries are broken up. The incision through which this work has been done is then closed and the round ligaments shortened in the usual way. The writer has practiced this procedure a number of times by both the vaginal and the suprapubic route, but for reasons of technique, which this is not the proper occasion to enter upon, he prefers the suprapubic approach.

In this connection it might be mentioned that Kellogg, for reasons and with exceptions for which I must refer to his paper,[1] says: "From my present standpoint I would not think of performing the operation of ventral fixation without also shortening the ligaments, etc." I myself have never met, nor can I conceive, the case to which I would consider a combination of the two operations applicable.

Ventral fixation has been considered, even by some who ordinarily prefer Alexander's operation, as indicated in sharp retroflexion of the uterus. This indication, however, I cannot allow, since I have succeeded in curing the most aggravated cases of movable retroflexion by shortening the round ligaments.

There remains one indication for ventral fixation, which, as far as my knowledge goes, has as yet neither been mentioned nor acted upon. I refer to cases of uterus unicornis causing symptoms which, under certain conditions, cannot be relieved short of operation. The writer has at present under observation a young woman, married over a year, in whom coitus has never been consummated, owing to intense dyspareunia. On examination she presents a uterus unicornis lying transversely across the pelvis, the developed right half of the body lying upon the right linea innominata, and the cervix pointing to the left in the vagina. The diagnosis of uterus unicornis with rudimentary left horn was made by tracing the left tube to the junction of corpus and cervix The tender left ovary lies immediately on top of the tilted cervix. The slightest pressure upward upon the latter causes the same intolerable pain which is experienced upon the entrance of the male organ. Ventral fixation of the uterus, with perhaps removal of the left ovary, will probably cure. Shortening of the round ligaments is not applicable to uteri unicornis, the round ligament of the undeveloped side, with the tube, arising from the uterus at the level of the os internum.

In conclusion the writer begs to submit the following propositions:

1. Vaginal fixation of the uterus does not come within the sphere of legitimate operations in women liable to future pregnancy.

2. The indications for ventral fixation of the uterus should be limited to the utmost degree in women liable to subsequent pregnancy.

3. Ventral fixation is never indicated in uncomplicated retroversion of the uterus.

4. Inability of an operator to perform shortening of the round ligaments *may* be an indication for ventral fixation, but not in the case of one claiming to be a specialist in gynecology.

5. Ventral fixation is indicated, *as an adjuvant*, in the performance of combined operations for prolapsus uteri et vaginæ.

6. Ventral fixation is indicated as a closing step in all celiotomies in which the adnexa are removed and the uterus is left.

7. Ventral fixation *may* be indicated, *under exceptional conditions*, in cases of adherent retroversion, with tubes and ovaries in good condition.

8. Ventral fixation *may* be indicated in the most aggravated cases of uncomplicated sharp retroflexion. The writer has not met such a case not amenable to successful treatment by shortening the round ligaments.

9. Ventral fixation is indicated, under certain conditions, in cases of uterus unicornis.

The operation of ventral fixation of the uterus is also known as hysterorrhaphy, hysteropexy, ventro-fixatio uteri, ventri-fixatio uteri, ventri-fixura uteri, and suspensio uteri; altogether too many designations for one operation. Hysterorrhaphy means suture of the uterus itself, and not attachment of the uterus by suture to another tissue or organ. It is of parallel significance with trachelorrhaphy, and no more. Hysteropexy signifies attachment or fastening of the uterus, but does not specify to what it is attached. It may mean vaginal, vesical, ventral, or any other fixation of the uterus. Ventro-fixatio uteri is ungrammatical; *venter* is a noun of the third declension. A Latin word *fixatio* does not exist; therefore neither ventro-fixatio nor ventri-fixatio is allowable. Ventri-fixura is the only correct Latin designation; *fixura*, an obsolete noun (from *figere*, *fixum*), being preferable to *fixatio*, a coined noun.

[1] *Modern Medicine and Bacteriological Review*, 1894.

The name suspensio uteri has been recently applied by Kelly, who first proposed the term hysterorrhaphy to a slightly modified ventral fixation. Neither the modification of technique, however, nor the change of name commends itself to the writer. Suspensio uteri, hanging the uterus, might better apply to shortening of the round ligaments, after which operation the uterus is really *suspended* in normal anteversion. A Fellow recently related to the New York Obstetrical Society a case in which, misled by the term suspensio uteri, he had suspended the uterus free in the abdominal cavity by sutures passed through fundus and anterior abdominal wall, not, however, bringing the two together. Sutures an inch or more in length run free through the peritoneal cavity of that patient between fundus uteri and anterior abdominal wall. Truly, a little knowledge is a dangerous thing. The operator was quite surprised when informed that this was not Kelly's suspensio uteri, as a case of which he had reported it, but that he had unconsciously performed an original operation not likely to have either claimants for priority or imitators.

Ventri-fixura uteri should be the Latin, and ventral fixation of the uterus or ventral hysteropexy the English, designation of the operation in question.

INDICATIONS FOR VAGINAL FIXATION, WITH ESPECIAL REFERENCE TO THE BEHAVIOR OF PREGNANCY AND LABOR AFTER THE OPERATION.[1]

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To fix the indications of an operation of such comparatively recent date, and one in which the modifications have followed each other in rather rapid succession, is not altogether an easy task. When I first began doing vaginal fixation, two and a half years ago, I did not purposely enter the peritoneal cavity, and, in consequence, was unable to directly break up any existing adhesions. Twenty cases were operated upon after this method. Of these there were five cases of mobile retroversions without any appreciable disease of the adnexa, and fifteen cases with more or less adhesions and moderate disease of some of the appendages. In the first group, the clinical and anatomical results were perfect in four. In the fifth they were good until six months afterward, when the woman tampered with herself to bring on a miscarriage at the third month. In the second group the results were good in eight cases, and in seven the backward displacement recurred in from three to twelve weeks after the operation. Among these seven failures there were four cases of congenital retroversion with adhesions. As a result of this experience I had for my own guidance limited the indications of vaginal fixation to mobile retroversions and retroflexions without any marked disease of the adnexa.

About sixteen months ago I changed the method of operating so that the peritoneal cavity was purposely opened, any existing adhesions directly broken up, the whole uterus delivered through the vaginal incision, as were also the adnexa, which were subjected to surgical treatment on conservative principles. Twenty-nine cases were operated upon after this manner. The anatomical cures may be said to have been 100 per cent., as the only case of partial relapse obtained in one instance in which the method was not carried out in its entirety. The period of observation of these cases varied from three to sixteen months. As the cases constituting this series comprised every form of adherent backward displacement, with more or less disease of the adnexa, the indications for the operation had virtually no limitation where a conservative operation was at all applicable. There was one form, however, of malposition, in which the operation, to my mind, was contra-indicated. I have reference to congenital retroversion. It is doubtful, in my opinion, whether we have any operative procedure that will invariably be attended with good results in this condition. Just at the time when the believers in vaginal fixation were commencing to feel that the indications for the operation were firmly established on a broad basis, even broader than that of ventro-fixation, as will be made clear later, came the disquieting reports of several cases in which serious trouble was encountered at labor.

Inasmuch as the influence upon gestation and labor has a very strong bearing upon the indications for operative procedures of this nature, I shall devote the remainder of time at my disposal to a consideration of that question in vaginal fixation, first giving a concise abstract of the cases hitherto published in which labor was more or less seriously complicated.

Case 1 (Strassmann).[1]—Intraperitoneal vaginal fixation; posterior colpo-perineorrhaphy; operator

[1] Read before the Section on Obstetrics and Gynecology, New York Academy of Medicine, Feb. 27, 1896.

[1] *Zeit. für Geb. und Gyn.*, *Band* XXXIII, pp. 510–514.

Dührssen; conception three months later; labor at full term; transverse position; difficult version; severe post-partum hemorrhage, arrested only by a compression abdominal bandage.

Case 2 (Strassmann).[1]—Operated on Oct. 4, 1893; operator Dührssen; vaginal celiotomy for myoma, size of an apple, attached to anterior uterine wall; defect in uterus closed by interrupted silk sutures, ends of which carried through the vaginal flaps; some vaginal fixation sutures employed in addition; as a result there was, so to speak, a melting together of the uterine vaginal walls; conception September, 1894; acute gonorrhœa of vagina and cervix during the following winter; came to the Poliklinik on May 24, 1895. There was then prolapsus of the cord; head was in the pelvis, lying in the vaginal fixated part of the uterus; cervix high up on the right side above the promontory; with one finger carried into the os the shoulder was felt; nothing done for 24 hours; then had an eclamptic seizure, afterward a chill; temperature 100°, pulse 104; tetanus of the uterus; unsuccessful attempt at version under narcosis, and finally Porro's operation. Death occurred an hour later—and autopsy showed chronic nephritis, free blood in the peritoneal cavity, and a hematoma in the right broad ligament.

Case 3 (M. Graefe).[2]—Operation May 6, 1894; vaginal fixation after Mackenrodt without opening the peritoneum; conception Nov. 30, 1894; colicky pains January, 1895. July 22, consulted in Graefe's absence Dr. Witthauer, who made out a transverse position, and observed edema of the feet. Again seen, Oct. 1st, uterus a hand's breath above the umbilicus, and very tense; transverse position of the child; cervix high up in the sacral cavity; attempts to change the position of the child ineffectual owing to the contractions of the uterus; shortly after had convulsions, amaurosis, urine contained a large precentage of albumin. Cesarian section, good recovery.

Case 4 (E. Wertheim).[3]—Operation by Schauta; method, Dührssen's. Five months after operation it is noted that the fundus is very closely and firmly adherent to the vaginal wall, "as if nailed to it." Labor at full term; cervix high up in the pelvis; transverse position of the child; under narcosis version after Braxton-Hicks method; delivery of a living child of eight pounds; good recovery. Some time afterward the fundus was still found lying against anterior vaginal wall, "as if nailed to it."

Case 5 (W. Rühl).[4]—Method vaginal celiotomy, with longitudinal incision; very extensive adhesions, leaving a raw surface on anterior uterine wall; vaginal fixation, result excellent; had been sterile 7 years; nine months later pregnancy; bladder disturbances; labor at term; seen 48 hours after labor pains set in; cervix high up in the right side; head in a diverticulum of the anterior uterine wall fixed in the pelvis; under narcosis head pushed up and cervix brought down; os dilated to admit four fingers; cartilaginous-like ring encircling os; with difficulty dilated os to admit whole hand; could not turn child; membranes had ruptured some time before; perforated head and incision of the cartilaginous ring; child easily delivered; afebrile recovery. Later uterus was found in good position.

Case 6 (W. Rühl).[1]—Vaginal fixation, with the fundus extensively sutured to the vaginal wall; pregnancy, bladder disturbances as in former case; labor at term; premature spontaneous rupture of the membranes; prolapse of cord; seen 24 hours after labor had set in; same local conditions as in former case; during examination, sudden cessation of the pulsations of the cord; incision in the anterior wall of cervix and body of uterus; child readily delivered with forceps; no hemorrhage worthy of mention; closure of uterine incision with catgut; afebrile recovery; uterus in good position several weeks later.

The same author reports three other cases of difficult labor at full term in which he did a version, saving the mother and the child.

CASES OF VAGINAL FIXATION IN WHICH PREGNANCY AND LABOR HAVE BEEN NORMAL.

W. Rühl[2]: Seven labors; method not stated.

E. Wertheim[3]: One labor; method probably Dührssen.

Strassmann (O. C.) reports 25 cases, several of which belong to Dührssen's series (estimate 10 cases).

Dührssen[4]: Seventeen cases; his own method.

Mackenrodt: Eight cases; his own method.

P. Wendeler[5]: Pregnancy at eight months; normal; method not stated.

Kossman[6]: One normal labor; vaginal celiotomy.

C. Staude[7]: One labor; Dührssen's method.

H. N. Vineberg[8]: Two labors and one pregnancy at seven months; method: modified Mackenrodt; vaginal celiotomy.

We thus have fifty-eight cases of labor, including two cases of normal advanced pregnancy, in which interference was necessary in nine cases as follows:[9] One Porro, one Cesarian section, two

[1] *L. c.*
[2] *Monats. für Geb. und Gyn., Band* II, *Heft* 16.
[3] *Centbl. für Gyn.*, 1896, No. 2.
[4] *Centbl. für Gyn.*, 1896, No. 6.

[1] *Ibid.*
[2] *Centbl. für Gyn.*, 1896, No. 6.
[3] *Centbl. für Gyn.*, 1896, No. 2.
[4] Quoted by Strassman, *Arch. für Gyn., Band* L, *Heft* 3.
[5] *Berlin. klin. Woch.*, 1896, No. 1.
[6] *Centbl. f. Gyn.*, 1896, No. 7.
[7] *Monats. f. Geb. und Gyn.*, Feb., 1896.
[8] *N. Y. Med. Jour.*, March 7, 1896.
[9] Even with faulty technique the showing is better than that following ventral fixation, where interference was necessary 11 times in 53 cases (Nieländer, *Zeit. f. Geb. und Gyn., Bd.* XXXIII, *Heft* 3).

cervical uterine incisions, and five versions. A further analysis shows that the difficulties obtained in cases operated upon after the Dührssen method, with a single exception—the case reported by Graefe. The report does not state the method of suturing nor the nature of suture material, both matters of vital importance in connection with the subject at issue.

When we investigate the nature of the difficulties we learn that they arose chiefly because the fundus was too firmly and extensively attached to the vaginal wall, necessitating the increase of the size of the uterus at the expense, principally, of the posterior uterine wall. This is just the contingency we might expect from Dührssen's method, in which a transverse incision is made in the anterior fornix at the vaginal junction, and the fundus attached by several sutures to the vaginal wall at this point.

Vaginal fixation, after the Dührssen method, therefore, has always been, in my opinion, faulty in technique, and has never been followed by me. My own experience, and that of others, have taught me that when certain points are observed in the technique of vaginal fixation no fears need be entertained of meeting with disturbances during gestation, nor with difficulties at labor. To be more precise: The superior fixation suture should be passed across the anterior wall of the uterus, one or two centimetres below the level of the insertion of the tubes, and through the vaginal walls one or two centimetres below the urethral meatus. Only two fixation sutures should be employed—the second a centimetre below the first. No scarification of the uterine wall should be made. The sutures should be tied on the vaginal wall, and removed at the end of three or four weeks. In my last two cases I carried out a technique which offers even less chance of any unfavorable influences upon gestation and parturition. After delivering the fundus, I passed a suture on either side, embracing the round ligament and a portion of the broad ligament adjacent to the uterus. These were carried through the vaginal flaps below the pubic arch at the side of the pelvis. In one of the cases, in addition, a suture was carried across the uterine wall in the usual manner, midway between the internal os and the fundus. The latter was employed to make more certain of the permanent result, though I think it may have been superfluous.

I have now arrived at a point at which, in a few sentences, I can formulate the indications for vaginal fixation as I understand and practice it.

It is indicated in all backward displacements of the uterus, with or without adhesions, and with or without diseases of the adnexa, in which surgical interference, for one reason or another, is demanded. It is particularly indicated when the backward displacement is complicated by moderate prolapsus of the uterus and prolapsus of the anterior vaginal wall. It finds an undisputed field in very fat subjects, with thick abdominal walls, in whom a ventral fixation constitutes a serious affair, and in whom an Alexander is extremely difficult of accomplishment. The same holds good in very thin subjects with thin and yielding abdominal parietes, so far, at least, as ventral fixation is concerned. The operation can be performed in nulliparæ, and even in virgins.[1] It is contra-indicated in certain cases of congenital retroversions. It should not be undertaken until a certain period has elapsed after the puerperal process, as the soft and friable condition of the uterus may lead to undesirable lacerations in the necessary manipulations to bring about anteversion of the organ.

NEGATIVE HISTOLOGICAL EXAMINATION OF THE BLOOD AS A FACTOR IN DIFFERENTIAL DIAGNOSIS.[2]

By WALTER A. WELLS, M.D.,
of Washington, D. C.

The very evident tendency of modern medicine to give greater prominence to those so-called clinical examination methods—physical, chemical, and microscopical—ought not, I think, to be construed as an effort to disregard, or even belittle, the value of close observation of the outward manifestations of disease, nor of the indispensable admission occasionally of anamnestic *data*.

We cannot fail to observe, however, that the latter functions are, with the progress of medicine, losing, in comparison with the former, their importance in the diagnostic art. To-day, instead of placing our chief reliance in history and symptoms, as did the earlier practitioners, we have relegated these to a somewhat subordinate position, and are inclined to pin our faith, rather, in the stethoscope, microscope, and chemical reagents.

These, it cannot be denied, are more precise, definite, and constant means, and are justified accordingly, from a scientific standpoint, in re-

[1] Among my cases there were four virgins and several nulliparæ, but they had been treated with pessaries and tampons for considerable lengths of time before being subjected to the operation.

[2] Read before the Clinical Society of the District of Columbia, January 13, 1896.

ceiving the high place which has been accorded them.

It is only very recently that methodical examinations of the blood have been made to serve the practical clinician; but there has been made in this short time such rapid and profitable advance, carrying with it such alluring promises of future possibilities, that there have appeared upon the field a succession of earnest and enthusiastic investigators, who have made and are continuously making valuable contributions in hematological studies. Would the medical practitioner but avail himself of those facts which stand confirmed by repeated observation, there would be certainly less excuse, if any at all, for ever confounding certain diseases which, without this aid, cannot be differentiated at times, even by the best diagnosticians; for example: pneumonia, in its commencement, from typhoid; typhoid from malaria; or even measles from scarlatina.

By the natural limitations of this paper, I am denied the consideration of the blood in various diseases, and even such instruments as the hemometer, hemaglobinometer, and hematocytometer. What information, then, is gathered by a mere examination of a specimen of blood under the lens? Beginning, as we should, with the fresh or native preparation, we may note the *rouleau* formation of the red blood-corpuscles, the fibrin formation in the plasma, the condition of the leucocytes, especially as to ameboid movement; the presence or absence of the plasmodium, better termed *hematobium malariæ*.

In the colored specimen we direct our attention first to the red blood-corpuscles. Are they altered in: (*a*) size constituting the so-called poikilocythemia? If so, do the microcytes (or smallest sized), megalocytes (large sized), or gigantocytes (excessively large sized) prevail? (*b*) Is poikilocytosis,[1] or, as Ehrlich prefers to designate it, schistocytosis, present? and if so, to what degree? (*c*) Are the erythrocytes abnormal as to the amount of coloring-matter contained in their discoplasma? We observe the size of the central dell. An alteration in the coloring-matter is designated polychromemia; and some writers term chlorotic those corpuscles which are poor in hemoglobin. (*d*) Are there present the nucleated erythrocytes, forms which do not occur at all in normal blood? If present, it is of importance to note whether the normoblasts only are present, or whether the mesoblasts, or yet more important the gigantoblasts, are to be seen. The leucocytes may next claim our attention. (1) An increase in their number can be detected through microscopical examination. There should be, according to Neudorfer, one leucocyte in about every fifth field. The presence of 1 to 2 leucocytes in the field constitutes a mild leucocytosis, 3 to 5 a moderate, and 5 to 10 a considerable. (2) We should, moreover, examine in reference to the relative distribution of the leucocytes, the preponderance of one or the other of the various forms constituting, respectively, a polynuclear leucocytosis, a lymphocytosis, or an eosinophilia. (3) Examination as to the number of the blood-plaques or hematoblasts; (4) as to the presence of the perinuclear basophiles; (5) as to the karyokinesis or karymytoses (the mitoses of Müller); and lastly (6) we may seek for micro-organisms, though this usually requires special staining, and is only exceptionally required. The blood must present then a normal condition in respect to all these in order that we may say that the histological examination yields a negative result. There are some diseases in which this is essentially the case which may therefore, I think, be fittingly discussed under this heading.

In the commencement, let me state it must not be supposed that a negative, that is to say a histologically normal, specimen can mean only a normal condition of the blood. On the contrary, there may be present a not inconsiderable anemia, which, because it does not extend to alterations in the character nor the relations of the elements, is not discoverable upon microscopical examination. Such may be the case in the so-called quantitative anemia, where, as it were, there is a general impoverishment of the circulating medium, an anemia in bulk, a parallel deprivation of all the elements without any disturbance of their relation to one another. In such an anemia we have therefore a color index represented by 1. We can illustrate this better, perhaps, by stating concrete cases. Let us suppose before us two individuals, both evidently suffering from a serious, exhausting illness, grave pathological condition of the internal organs, both being weak, emaciated, cachectic, and very pale, and there may or may not be signs pointing to a definite localization of trouble in lungs, liver, spleen, or other organ.

We take a specimen of blood from the one case, fix and stain orderly with, say, eosin-hematoxylon, and what do we find? In addition to an augmentation in the number of leucocytes, there are alterations of a high degree in the elements.

[1] Whether poikilocytosis is, as Maragliano's experiments seem to prove, but a form of necrobiasis artificially produced outside of the body, or not, does not alter its significance from a clinical point of view.

We have, in this case, to regard the poikilocytosis as a measure of the corpuscle's vitality.

There is poikilocytosis, poikilochromemia, megalo- and micro-cythemia, and we observe in the field also a number of nucleated erythrocytes. We now prepare a specimen in like manner from the other case and proceed to examine.

We see a different picture, and one that we may not have expected, in the case of an individual so manifestly anemic, with pale face and bloodless mucous membranes.

We can observe no signs of anemia in this blood upon microscopical examination, the leucocytes and erythrocytes are present in their normal relation to one another, and there are no departures from the normal as regards size, shape, or coloring. This patient is the subject of tuberculosis; the former has the blood characteristics of carcinoma.[1]

It is true that if we had used the Ehrlich tricolor stain we would in all probability have noted a deviation from the normal, because then it would be seen that the perinuclear basophiles of Neusser,[2] which are normally present, either failed or at least were lessened in number.

If we should proceed to the count of the corpuscles and to a measurement of the hemoglobin, the calculation of the color index[3] will result, as a rule, in 1 or thereabout, seldom less than .8.

It is surprising, as Grawitz[4] has shown, how little may be the reduction in the number of erythrocytes in tuberculosis, in spite of the apparent anemia. This he believed to be due to the peculiar effect of the absorption of tuberculous products, causing a condensation of the blood. His experiments upon animals demonstrated that injections into the veins of tubercular masses produced increased specific gravity of the blood, whereas the injection of extracts from cancer caused decrease of the red corpuscles and solid constituents of the blood.

The absence of the nucleated erythrocytes is one of the most important negative features of tuberculosis, especially as it is in this so distinctly opposed to cancer. It has been observed they are absent, or at least quite scarce, even after hemoptysis in tubercular subjects, although commonly a feature of anemia following hemorrhage. Tuberculosis is therefore, in its exemption from the erythroblasts, distinguished not only from cancer, but likewise from progressive pernicious anemia, leukemia and anemia infantum, pseudo-leukemia, and the anemias of tertiary syphilis and phosphorus-poisoning.

A second important negative feature of tuberculosis is the absence of leutocytosis.[1] Limbeck was, upon the strength of this single fact, enabled in three cases to make the diagnosis of tubercular meningitis, in contradistinction from the primary suppurative form, in which leucocytosis, usually of an intense degree, manifests itself, and found his diagnosis substantiated by autopsy. These observations, confirmed later by von Jaksch,[2] cannot easily be overestimated, on account of the evident bearing upon prognosis.

An interesting negative feature of the blood in tuberculosis is the absence of an increase of the fibrin-net—interesting because tubercular disease of the lungs runs sometimes the course of a pneumonia. The latter affection is marked as well by a high degree of polynuclear leucocytosis as by its great increase of fibrin. It seems that the Koch bacillus, unlike the diplococcus, retards the formation of the fibrin, and that it is less, therefore, in those cases of croupous pneumonia developing in tubercular individuals.

There almost never occurs eosinophilia in tuberculosis,[3] and this fact may also be made use of in differentiating it from certain affections in which an increase of these elements is the rule, namely, Graves' disease, myelogenic chlorosis, intestinal parasites, leukemia, nephritis, chronic malaria, and primary essential emphysema and asthma.[4]

We have pictured in the foregoing only the uncomplicated disease. It may be profitable to recall here briefly some of the modifications in this typical case which can occur by reason of complicating conditions. We may see a chlorosis of red blood-corpuscles where there have been: (*a*) hemorrhage, (*b*) excessive diarrhea, in (*c*) conditions giving rise to a great loss of albuminates, and (*d*) in case of complication with chlorosis.

A polynuclear leucocytosis in the course of tuberculosis pulmonum should awaken a suspicion of extensive cavity formation. A lymphocytosis

[1] It has been maintained by Bard that the blood may be independently the seat of cancer, and he has advanced the unique theory that leukemia is cancer of the blood.

[2] "*Ueber einer besonderer Blutbefund bei urathischer Diathese*," *Wiener klinische Wochenshrift*, 1894, VII, 727.

[3] The color index may be quickly estimated by dividing the number of red blood-corpuscles by 5,000,000, and then dividing the per cent. in hemoglobin by the result obtained.

[4] *Centralblatt für Innere Medicin*, No. 15, 334.

[1] Rieder: "*Beitrag zur Kenntniss der Leukocytose und verwandte Zustanda des Blutes*," Leipsic, 1892. Sadler: *Fortschritte der Medicin*, Berlin, V, 10, 1892. Limbeck: *Schmidt's Jahrbücher*, Leipsic, March 15, 1894. Peck: *Wiener medizinische Presse*, 1891, June 29.

[2] R. von Jaksch: "*Ueber Diagnose und Therapie der Erkrankungen des Blutes*," *Prag. med. Wochenschr.*, 1890, Nos. 31 and 33.

[3] N. B. Botkin and Bischoff have seen considerable increase of eosinophiles after injections of tuberculin.

[4] Some authors have failed to find an increase of eosinophiles in the blood in asthma, but Gabretschewsky ("*Klinische Hematologischen Notizen*," *Archiv f. experim. Pathol. und Pharmakol.*, 1890-'91, 28) reports three cases in which the per cent. was 9, 10, and 22 respectively. At any rate the sputum of asthmatics ("*Gollasch zur Kenntniss des asthmatischen Sputum*," *Forthschritt d. Med.*, No. 10, 1889) will contain copious quantities of eosinophiles, which are always wanting or very scarce in tubercular sputum.

may exist as the expression of a quite general involvement of the glandular system. Very rarely one may have the type of a pernicious anemia. This could occur from the coexistence of sepsis, amylosis, nephritis, or carcinoma.

We pass next to the consideration of one of the essential fevers, the blood of which, though not in every respect normal under the microscope, yet at least presents negative features which mark it so clearly from others of its class as to entitle it to consideration under this head. I refer to typhoid fever, a disease in which all possible aids toward a diagnosis are to be welcomed, as the best clinicians confess themselves at times unable to make an early diagnosis. The most noteworthy negative feature of typhoid fever is the absence of a leucocytosis. Halla,[1] in 1883, made the general observation that febrile diseases were accompanied by the phenomena of leucocytosis. Limbeck,[2] at a later date, pointed out that leucocytosis occurred in only those inflammatory affections attended by exudation into the tissues, and mentioned typhoid as an affection exempt. This fact has been emphasized by Rieder,[3] Chetagraw, and Felsenthal,[4] and amply confirmed by clinical observation. Very often it is found, indeed, that the number of the leucocytes is under the normal; that, instead of a leucocytosis, there is a leukopenia. The decrease is at the expense of the polynuclear element, which may fall at the critical stage to 20 per cent., instead of their normal 64 per cent.; whereas the proportion of lymphocytes may rise to 50 per cent., instead of their normal 28 per cent. This relative lymphocytosis does not occur, however, until the second or third week. The diagnostic importance of a normal or, as the case may be, lessened number of leucocytes occurring in typhoid is seen when we know that but three other febrile affections present a similar condition of things, viz., measles, malaria, and tubercular meningitis.

We can easily exclude pneumonia, an affection marked by an intense leucocytosis. It also differs from pnemonia in showing no fibrin development. Malaria, even if search for the plasmodium should be negative, has positive signs in the usually found increase of pigment, hematoblasts, and eosinophiles. Endocarditis maligna, presenting at times a picture very difficult to distinguish from typhoid fever, may be excluded if leucocytosis be absent; so also any form of sepsis.

If, finally, from other symptoms, an irrefutable diagnosis of typhoid is justified, we must conclude a complication exists, as nephritis, pneumonia, otitis, parotitis. A polynuclear leucocytosis in the later stages—fourth or fifth week—may find its explanation in extensive ulcerations in the intestine that do not heal.

Measles, as already stated, presents a blood-type not unlike typhoid.

In the tendency toward a low number of leucocytes, especially of the eosinophiles, which Felsenthal found never over 1 per cent. (lowest normal limit), mark it very strongly against scarlatina, in which Katschetkoff[1] has found always leucocytosis, which at times reached 30,000, and in which eosinophiles varied from 8 per cent. to 15 per cent.

Other affections may be mentioned where the blood is essentially normal, as in primary syphilis, icterus neonatorum,[2] morbus maculosus Werlhofii, scorbutus (signs of regeneration in blood being usually wanting),[3] and benign growths; which facts may be of real use at times for diagnosis.

For instance, a dilatation of the gall-bladder or a hydronephrosis could in this be at least distinguished from echinococcus, because the latter is attended with eosinophilia.

In conclusion, I will mention an instance of negative examination of the blood leading directly to diagnosis, under circumstances somewhat unique. At a time when I was engaged in hematological studies at Neusser clinic, in Vienna—

A female patient, age 25, was admitted to the wards whose history was briefly as follows: As a child, had had rickets, measles, scarlet fever; menses began at 17 years, and have been since regular and normal.

At age of 13 suffered much from gastric troubles, for which she was under treatment in hospital seven months; vomited after eating, often a quantity of blood; had distate for sour food.

Present attack began three weeks prior to admission, and is similar to the former. Vomiting comes on ten to fifteen minutes after eating, and several times the patient declared there had been copious admixture of blood. There was tachycardia; respiration 58.

A provisional diagnosis of ulcus ventriculi was made in this case, and I undertook an examination of the blood, expecting to find the alterations

[1] "*Ueber den Hämoglobinsgehalt des Blutes und die quantitative Verhältnisse der rothen und weissen Blutkörperchen bei acuten fieberhaften Krankheiten*," *Zeitschrift für Heilkunde*, 1885, V, 4.
[2] *Schmidt's Jahrbücher*, Leipsic, March 15, 1891.
[3] "*Die pathologische Anatomie des Blutes bei Typhus abdominalis*," Dissert., Petersburg, 1890.
[4] "*Hematologische Mittheilungen*," *Archiv f. Kinderkrankheiten*, Stuttgart, 1892–93, XV, 78.

[1] Katschetkoff, "*Die morphologische Blutveranderungen bei Scharlach*," *Wratsch.*, No. 41.
[2] "*Fischl zur histologie des Kindliches Blutes*," *Zeitschrift für Heilkunde*, V, 13, p. 277.
[3] Neusser's *Lectures* are my authority for this and many other statements where no reference is given.

belonging to a post-hemorrhagic anemia; that is to say, in addition to slight leucocytosis, some nucleated red blood-corpuscles, a predominance upon the field of microcytes, and an increased number of the so-called hemoblasts, or blood-plates of Bizzozero;[1] but, to my astonishment, these changes were not to be seen, and the result of a thorough analysis was a normal condition of the blood.

The following day the case was demonstrated by Neusser in the lecture-room, and diagnosis was reached of hysteria, with hysterical vomiting, the vomiting of blood, which had not been seen by any one else, being discredited on the strength of a failure of post-hemorrhagic changes. Neusser laid chief stress upon the hematoblasts, which he holds to be important signs of regeneration in the blood, and whose presence in large numbers, therefore, he regards as favorable. He believes them to arise from the shed-off epithelium of the vessels; differing from Bizzozero, who thought they arose from the destruction of the white and red blood-corpuscles, and Löwitt, who supposed them to be the products of the destruction of the leucocytes or precipitates from the plasma, and therefore degenerative changes. According to Hayem, they are steps in the formation of erythrocytes. At any rate, their presence is not to be expected until a day or so after the loss of the blood.

The diagnosis in the case in question was corroborated by the discovery of the so-called hysterical stigmata. An interesting feature was the absence of hydrochloric acid from the stomach secretions.

If I have succeeded in demonstrating that blood analysis is more frequently demanded than was formerly supposed, and may be helpful to diagnosis at times, even though negative in its result, and have thereby added any incentive for greater attention to that department of investigation which certain observers believe offers a hopeful medium for the solution of many dark problems in physiology and pathology, then my object in presenting this paper has been accomplished.

Under the laws of the State of Louisiana the New Orleans *Medical and Surgical Journal*, Ltd., was incorporated last month. It is our sincere hope that this departure will insure a long and successful career for our esteemed Southern exchange.

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[1] Bizzozero and Salvedi, "*Ricerche sperimentali sull' ematopoesi Splenica*," *Archivio scienze Mediche*, Vol. IV, No. 2.

CLINICAL MEMORANDA.

SOME OF THE USES OF STROPHANTHUS.

By W. K. WADLEIGH, M.D.,
of Hopkinton, N. H.

Strophanthus is by no means a new remedy—a memoir of its physiological action was presented to the French Academy of Sciences in 1865, thirty years ago. Dr. Fraser began to study it in 1869, but it was not until 1885 that he gave it a definite place in therapeutics as a heart tonic. The physiological action of strophanthus, generally speaking, may be said to be similar to that of digitalis, but there are some points of difference. Unlike digitalis, it has very little, if any, power to contract the small blood-vessels, in the ordinary medicinal dose. As a diuretic, it is much more sure and certain than digitalis, acting probably on the Malphigian tufts. The effect produced by strophanthus is almost immediate, though not so prolonged as that of digitalis, and it almost never produces any unpleasant stomach symptoms, no matter how long administered.

This is a point of practical value, as it not unfrequently happens that the administration of digitalis has to be suspended, or even stopped entirely, on account of the derangement of the stomach, which is sometimes produced even by the smallest doses. In large doses strophanthus acts not only on the heart muscle itself, but upon the entire muscular structures of the body. In poisonous doses it will cause nausea and vomiting, and acts as a depressant to the respiratory centres, and finally causes death, usually by asphyxia.

Clinically, strophanthus may be used with more or less benefit in all cases where digitalis is indicated, not that it will do as well in all cases, but if digitalis has failed, or has had to be discontinued for any reason, we have in strophanthus a valuable substitute; but it is more especially in a few conditions in which digitalis is not so generally applicable that strophanthus finds its chief usefulness:

1. Among aged people, generally speaking, I have found strophanthus to give much better results in almost every condition where this class of remedies is indicated. In old age we often find an atheromatous condition of the arteries; and although digitalis may not be positively contra-indicated, in all such cases it is very apt to do little good, and sometimes may even do harm.

2. In vertigo of aged people caused by cerebral anemia or by a lack of balance between the different parts of the circulation of the brain. This is something we find very little about in the books, and it is a condition in which I have been able to do much good with strophanthus.

3. In angina pectoris. My experience with strophanthus in this disease has led me to believe that it will benefit a larger number of cases than any single remedy we possess.

4. In general anemia and chlorosis when accompanied by weakness of the heart, as so often happens in these diseases, it not only gives great relief so far as the heart symptoms are concerned, but, by sending more blood to

the tissues, increases their nutrition in this way. It is often an advantage to combine it with nitroglycerin in anemia.

5. In the so-called irritable heart characterized by palpitation on slight exertion, more or less pain in the region of the heart, often quite severe, weak, quick pulse, sometimes intermitting, but with no organic disease of the heart present. In this condition we may give strophanthus with almost an absolute certainty of deriving benefit from its use. This class of cases is quite numerous, and I have yet to see the case which strophanthus will not benefit, and it will often cure them.

I have been using strophanthus now for about seven years, and during that time have given it in a good many cases, and in fact I consider it one of the most useful remedies we have. It is impossible to give a report of many cases, because I have not kept a record of them. I will, however, mention two or three cases which may be of interest:

Case I. Mrs. C., 56 years old; history of organic heart disease for several years. On being called to her I found the following conditions present: Very marked mitral regurgitation, considerable dilatation, anasarca of the lower extremities to the knees, great dyspnea so that the patient was not able to lie down at all, more or less edema of the lungs, with incessant coughing. Prescribed digitalis, ten drops every two hours, .1 grain of calomel every hour, with stimulants. Two days of this treatment produced very little or no results whatever. Convallaria was next tried, with no better result. Nitroglycerin gave some temporary relief, but nothing permanent was really accomplished until strophanthus was used, the good effect of which was apparent almost immediately. In twenty-four hours she was able to resume the horizontal position, and the improvement was continuous from this time on, the anasarca mostly disappeared, excepting some slight swelling about the feet and ankles, and she was able to get about the house and attend to her household duties. At this time the remedy was discontinued and she soon returned to the same condition in which I first found her.

Strophanthus was again administered, with equally good result. She went through this same process three times and she then passed from under my care, and her next attack proved fatal. This was the first case in which I used strophanthus. The largest dose administered was twelve drops, and I have never found it necessary to exceed this amount in my subsequent cases. I do not know why digitalis did not succeed, or why so much greater benefit should be derived from strophanthus, as the conditions present would seem to point to digitalis as the remedy.

Case II. Mr. K., aged 86. History of temporary insanity some thirty years before. Found him in a generally enfeebled condition, and troubled with vertigo so that he was unable to walk without assistance; when he attempted to do so he would almost invariably fall. Began to give strophanthus and in two weeks he was able to walk without assistance.

This was supplemented by other treatment as occasion required. I made several attempts to discontinue the strophanthus, but each time I did so I found him returning to his former condition. He took the remedy almost continuously for five years, until the time of his death. This case is of interest for two reasons: First, it illustrates the benefit which may be derived from the use of strophanthus in cerebral vertigo of old people, of which I have already spoken, and it also shows that it may be given for a long period without any unpleasant symptoms arising from its use. So far as I know, this is the only case which has been reported where strophanthus has been given continuously for so long a time.

Case III. Angina pectoris. Male, 46 years of age. Had been suffering from the disease about two years when he first came under my care. Treatment five drops of tincture of strophanthus with two drops Fowler's Solution three times a day. His attacks soon became less frequent and severe, and improvement continued as long as he used the remedy. He had been obliged to take one-half grain of morphine two or three times a week for the relief of the paroxysms, but was soon able to discontinue this. In this case nitroglycerin seemed to augment rather than relieve the severity of the paroxysms. He died of this disease last winter, some time after he had passed from under my observation. This is only one of several cases of angina where I have given strophanthus, and it has always given more or less relief with the exception of one case. This patient could not take it, for some reason, and it had to be given up.

The best preparation of strophanthus is the tincture prepared from the seeds. The dose given is one to ten minims; it is rarely necessary to give it in larger doses than five drops, three or four times a day.

TOXIC SYMPTOMS PRODUCED BY PIPERAZINE.

By CHARLES H. P. SLAUGHTER, M.D.,
of Philadelphia.

The compound whose toxic symptoms are about to be described is a comparatively recent one, being introduced by Merck as an antipodagric and antirheumatic. Very little is known, as far as the writer can ascertain, in regard to its physiological, toxic, or therapeutic action. Chemically, it is a diethyl-diamine ($C_4H_{10}N_2$).

The following case has come under my observation: Maud E., married, of English birth, 32 years of age and a sufferer from uric-acid diathesis, applied to me for treatment on December 10, 1895. I placed her on the ordinary remedies for such complaints, but with negative results. On December 16, 1895, I was summoned to her home, and found her complaining of quite marked vesical irritability and tenesmus, being now confined to her bed. Upon examining the urine I found it rich with uric acid. To overcome the marked acidity of the renal secretion, and, at the same time, cherishing hope that the diathesis would be favorably influenced, I ordered her the following prescription, viz.:

℞

Piperazine 3i

Fiat chart. No. iii.

directing one of these powders to be dissolved in a pint

of water, the whole to be consumed during the following 24 hours. This was about noon.

Mr. E., the husband, took the prescription to the drug-store and had it compounded. Forgetting just how the potion was to be administered he inquired of the drug clerk, who directed him, with the customary wisdom, to dissolve a powder *in a teaspoonful of water* and give at once. When the husband arrived home he relieved himself of the directions which the druggist had given, but the wife remembered my statement that a pint of water was to be used to dissolve the powder. This she did, and drank the entire pint, containing 20 grains of piperazine. When the proprietor of the store returned the clerk informed him how he had directed the man to give the medicine. Realizing that this was a rather potent dose, the proprietor hastened to the patient's house, only to find that the entire 20 grains had been taken. He called on me at about 5 o'clock, relating the above circumstances and stated that the patient's pulse was good.

I saw the woman at 7:30 P.M. She was greatly cyanosed and semi-comatose, it being necessary to arouse her to obtain any reply to inquiries. Her pupils were minutely contracted, the pulse 50 beats per minute and slow, temperature 97.4° F. The respirations were very much depressed and a low muttering delirium prevailed. The tips of the fingers and lips were cyanotic, and on attempting to walk complete loss of motion was observed in both lower limbs, while sensation was well preserved. The symptoms were indeed most alarming.

Appreciating the gravity of the situation which confronted me, I administered cardiac and respiratory stimulants, using at the same time external heat and elevating the lower limbs. The woman also received a high stimulating rectal injection and was catheterized. It was only after several hours of the above treatment, persistently administered, that reaction occurred.

The next day I visited her and found the loss of motion returning and also a marked hypostatic congestion of both lungs. Upon the sixth day the paraplegia had vanished and the woman finally made a complete recovery. The paralysis was treated with large doses of strychnine and massage.

MEDICAL PROGRESS.

Experimental Addison's Disease.—At a recent meeting of the Société de Biologie, Boinet (*Semaine médicale*, 1896, No. 8, p. 62) related the results of a series of experiments directed to the artificial production in animals of Addison's disease. It was found that lesions of the suprarenal capsules were followed by an accumulation of black pigment in the blood and an infiltration therewith of a large number of organs and tissues. From 109 rats both suprarenal glands were removed; the glands of 20 were ligated, and in a third series the glands were cauterized by means of tincture of iodine, silver nitrate, ferric chloride or zinc chloride, or irritated with pus from inflammatory or tuberculous lesions. The black pigment, which was like that found beneath the skin and the mucous membrane and in several organs from two fatal cases of Addison's disease, was found in the blood in notable quantity in half of the cases, in smaller quantity in a quarter, and not at all in the remainder. In a number of animals whose suprarenal capsules had been irritated or removed several months previously, there was also an infiltration of the pigment in the subcutaneous cellular tissues, in the lumbar and mesenteric glands, in the peritoneum, in the mesentery, under the fibrous capsule, and in a cyst of the kidney, in a cyst of the liver, in the superficial portions of the spleen, in the lung, in the prevertebral cellular tissue, at the surface of the brain, in the bony marrow, and in the muscles. Sometimes marked muscular paresis, with gradual asthenia, completed the analogy with Addison's disease. Finally, injection of an extract prepared from the muscles of such rats induced fatally toxic results in other rats, especially if the suprarenal glands were previously irritated or removed.

Hernia of the Vermiform Appendix.—Sendler (*Münchener medicinische Wochenschrift*, 1896, No. 5, p. 96) has reported the case of a male infant, 5 weeks old, presenting a telangiectasis of the right thigh, a small umbilical hernia, and a slight hypospadias, who, after mild signs of illness for a day or more, was seized with vomiting of greenish matter, while the bowels were constipated and even flatus was not expelled. The condition soon became alarming, pallor and other signs of collapse manifesting themselves, and relief not following hot baths and high rectal injections. It was now observed that a slight swelling had formed in the right groin and right side of the scrotum. The umbilical hernia was readily restored, but the swelling in the right groin was tense and elastic and could not be dissipated. Incarcerated inguinal hernia was diagnosticated, and after a prolonged hot bath and attempted reposition under ether, without success, an incision was made over the swelling in the groin and the hernial sac exposed. In the sac was found the vermiform appendix, which was about two inches long, reddish-brown in color, and swollen and flexed in the middle, and situated like a bar before the inguinal opening. The appendix, which was provided with a well-defined mesentery, presented a furrow resulting from the strangulation, but the cecum appeared healthy. The appendix was ligated at its base and removed, and the stump covered with serous membrane and inverted into the cecum. The inguinal ring was divided, the cecum returned to the abdomen, the hernial sac largely extirpated, and the canal finally closed by suture. The further progress of the case was free from complication, and the child was dismissed at the end of a week with a gain in weight and all its functions well performed.

Tabes Dorsalis as a Disease of the Neuron.—Moxter (*Zeitschrift für klinische Medicin*, B. XXIX, H. 3, 4, p. 334) reports an interesting case of tabes dorsalis under observation at the clinic of Prof. Leyden, Berlin, in support of the hypothesis that the disease is primarily an affection of the neuron. The patient was a woman, 57 years old, in whom double optic atrophy developed in the course of four months, leading to almost total blindness. In addition there were lancinating pains in the lower ex-

tremities, girdle-sense, and radiating pains paroxysmally in the face and head. Death resulted in consequence of disease of the heart. Post-mortem examination disclosed evidences probably of tertiary syphilis (atrophy of the glands at the base of the tongue, in conjunction with arterio-sclerosis). Upon microscopic examination, numerous atrophic fibres were found in the peripheral nerves. The arachnoid throughout the cord presented evidences of chronic inflammation. The lowest roots of the posterior nerves in the cauda equina were the seat of only slight changes. In the posterior columns of the sacral and lumbar portions of the cord were ill-defined areas containing a relative deficiency of fibres. The posterior roots from the 5th dorsal to the 8th cervical contained atrophic fibres arranged in bundles and whose medullary sheaths failed to take appropriate stains. In the same region the intramedullary fibres were greatly rarefied. In the posterior columns from the 5th dorsal segment upward were two well-defined areas, showing an increase in glia and an absence of fibres, but no loss of fibres could be demonstrated above the nuclei of the posterior columns. The gray matter of the lumbar and sacral cord contained an area of destruction and disappearance of ganglion-cells, with increase in the glia and disappearance of the medullated nerve-fibres. Above this, destructive changes had taken place in the anterior horns of the gray matter. In the retina the cells of the ganglion-cell layer were greatly rarefied, and the nerve-fibre layer was altogether wanting. Some fibres remained in the papilla and in the optic nerve. A similar loss of fibres was present in the chiasm, while the cells of the pulvinar and of the geniculate body were unaffected.

Lead Gout and the Influence of Lead Intoxication upon Uric-acid Excretion.—As the result of a careful clinical study and a survey of the literature of the subject, Luethje (*Zeitschrift für klinische Medicin*, B. XXIX, H. 3, 4, p. 266) maintains that there can be no doubt that an intimate relation exists between lead intoxication and gout. It is probable that by itself, without the aid of other etiologic influences, lead is capable of causing gout. Intoxication with lead has no influence upon the excretion of uric acid; so that the gout-inducing activity of lead is not due to retention and accumulation of uric acid. The presence of uric acid in the blood of those suffering with lead intoxication is to be attributed to an excessive production of this acid. How this is brought about cannot at present be explained. In all probability lead is capable of inducing "gouty necrosis." In order to cause gout the intoxication with lead must have been of long standing. The clinical course of lead gout differs in several particulars from that of the ordinary form of gout: (*a*) The first attack usually occurs at a relatively early period in life. (*b*) There is a tendency for many joints to be involved in rapid succession. (*c*) Often joints are involved that usually escape in the ordinary form. (*d*) The tendency to the formation of tophi and of deformities is more than ordinarily pronounced. The prognosis is always dubious. Examination of the urine of a dog poisoned with lead showed that xanthin bodies comprised about half of the nitrogen of the alloxur bodies. After feeding with thymus gland, xanthin bases could be found in the blood, but no uric acid.

THERAPEUTIC NOTES.

The Treatment of Urinary Lithiasis.—In the attack of renal colic the patient should be placed in a warm bath and there kept for an hour. Of the following solution 15 minims should be injected hypodermically at once, and thereafter 8 minims every hour until the pain subsides:

Take of:

Morphine hydrochlorate	$2\frac{2}{3}$ grain
Boiling water . .	$1\frac{1}{2}$ fluid drams.—Mix.

Besides, a pill containing 1-6 gr. each of powdered opium and powdered belladonna should be taken twice daily. In the intervals between the paroxysms the patient should abstain from dark and smoked meats, from game, sorrel, asparagus, peas, tomatoes, and spinach. He should avoid also all alcoholic and aerated beverages, as well as tea and coffee. He may eat white meats, well cooked, eggs, light fish, farina, and fruits, fresh or stewed. He may drink white wine half diluted. He should take daily exercise in the open air, but should avoid excesses of all kinds. Every morning the surface of the body should be rubbed with flannel gloves. A simple bath may be taken every third day. Before each meal 15 grains of lithium benzoate may be administered well diluted. Any pure water or litha-water may be taken freely. — *Tribune médicale; Progrès médicale*, 1896, No. 2.

Urea as a Diuretic.—Governed by a knowledge of the solvent action of urea upon uric acid, Klemperer (*Berlin. klinishe Wochenschrift*, 1896, No. 1, p. 6) was led to employ the first-named agent, medicinally, in the treatment of a number of cases of uric-acid renal calculi. The results were entirely satisfactory. It was noticed besides that conspicuous diuresis resulted also. For this reason it was concluded to employ urea as a diuretic, and in two cases of cirrhosis of the liver attended with ascites it was thus used and caused the disappearance of the peritoneal effusion. The agent was given dissolved in distilled water in the proportions of from 1 to 20:200 (from gr. xv to ℥ v to about f ℥ vij) to be taken daily in tablespoonful doses at intervals of an hour. The taste of the drug is not agreeable, but is readily removed by drinking milk after the ingestion. No ulterior influence was exerted upon the appetite or digestion of those using the agent. For its action as a diuretic, a healthy state of the renal parenchyma is necessary.

For Uterine Leucorrhea.—

℞	Acidi Tannic. . .		℥ ij
	Alcohol. pur.		
	Creosoti . .	aa	f ℥ ss.
	Aquæ destil. . .		f ℥ viij.—M.

S. Add a tablespoonful to a quart of warm water, and use three or four times a day as a vaginal injection.

—Lirola, *Progrès médical*, No. 6.

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SATURDAY, MARCH 14, 1896.

IS NEW YORK TO HAVE ITS MOLOKAI?

If it be true that misery likes company there must have been rejoicing when the doors of the North Brothers Leprosery were thrown open to admit the latest victim of this uninviting disease. The lot of the four patients who have been confined in this temporary lazaretto during the past few months must have been happiness itself compared with the fate of Ding, the Chinaman who died a year or so ago, forsaken and forlorn, the sole inmate of a rude hut erected on the extremity of the island. Here, without the consolation of a word spoken in a tongue he could understand, longing and hoping day by day that he might be sent back to the Flowery Kingdom, and suffering more from nostalgia than from his actual disease, he finally refused to partake of the food passed in at the door of his living tomb, and perished miserably.

Well might the writer of his obituary in a German paper at the time, call him "*Armes Ding*," for he had been poor indeed. Another Chinaman is there now—Long Dong. Their very names ring out their knell! He, however, has companions: Bryan and Peters, who are negroes; Dalco, an Italian; and now a native of the United States, who has lived in this city for seventeen years, has joined the outcast band.

This man is a cook, and it would seem either that this occupation predisposes to leprosy, or that lepers are especially apt to seek a livelihood by catering to the wants of the inner man. It will be recalled that the leper who created so much discussion, and a certain amount of lepraphobia in Philadelphia several years ago, was a hotel cook in that city. A few years previous to this an American woman who had resided among lepers in South America, was discovered with marked manifestations of the disease, while acting as cook in a Philadelphia restaurant. Several of those who have from time to time been inmates of the New York City Hospital have given the culinary art as their occupation. Within a few months a domestic in a private family in Boston was found to be leprous, but whether or not she did the cooking has escaped us. Evans, who died during the past year in the City Hospital, and who was for a long time under the writer's care, came to this country from Bermuda at the age of 12 years, and was here for two years before signs of the disease showed themselves. He then returned to Bermuda, and subsequently took a trip on a vessel as cook, or cook's helper.

"Vic," who was also at one time a patient of the writer's, was a noted cook, and a particular stew which he manufactured at the Colored Home was held in high esteem by the hospital inmates, when they were fortunate enough to be in his good graces. "Vic" and his stew are, however, things of the long since past, and we must return to things present and to come.

Does the American leper have a fair show?

In a New York newspaper of recent date appeared the following dispatch from Minneapolis;

"A case of Asiatic leprosy has been discovered in the western part of Grand Forks County, North Dakota. The victim is Jens Olsen, a Swedish boy, 17 years old and an orphan. The county commissioners have had a small cabin built for him on a farm, and he will be kept there alone."

Is this really the threshold of the twentieth century on which we stand? Are we living in a Christian land? Can we call ourselves civilized?

Is it not enough to be an orphan and a leper without being condemned to an eternity "alone"?

Even if the report of such an outrage is not true, it has gone out to the world as the American modern method of caring for these unfortunate creatures, and we have seen the same methods applied at our very doors. At the third meeting of the Congress of American Physicians and Surgeons in Washington, the question of national control of leprosy was fully discussed, and the following motion was adopted and directed to be transmitted to the proper Committees of the Senate and House of Representatives:

"Whereas, The American Dermatological Association recognizes the importance of the undoubted existence of leprosy in North America; therefore

"*Resolved*, That the Congress of American Physicians and Surgeons be requested to memorialize the Congress of the United States of America, with a view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States of America, and in countries upon its border; and to suggest means for the control of the disease."

No action seems to have been taken upon this very reasonable request. In the mean time the leper population has begun to cause trouble under inadequate city and State control.

In Louisiana, where the necessity for action has become imperative, a hospital has been established on the Mississippi, made up of eight cottages surrounding a fine old plantation house; but in spite of the "Arcadian scenery" and other attractions of the place which offers accommodations for one hundred inmates, few can be induced, without the use of force, to avail themselves of it. From recent reports the disease would appear to be increasing at the expense of the native-born population in and about New Orleans, and it would seem to be as much a matter of national as of State interest to check its spread.

As far back as 1888 Dr. Blanc reported 42 cases of leprosy, 29 of which were in natives of Louisiana, and 22 of the city of New Orleans.

As to the existence of leprosy in countries upon our borders it is to be found in Canada, British Columbia, Mexico, Cuba, and the West Indies in general. In Havana a leper-house was established as early as 1681, but the disease had begun to diminish until a decided Chinese immigration set in. Now it is difficult to say how many lepers are on the island, but the hospital itself usually shows a census of little less than one hundred.

In Jamaica the leper population has been estimated at 450, or 1 to each 1380 of the residents of the island. To be sure, our little band makes a poor showing alongside of these figures; but if a suitably attractive resort were established, we could in time keep it respectably filled. Brooklyn would send from three to five good cases at once, Harlem could contribute, and the eligible stray subjects about town might be glad to avail themselves of the hygiene and science to be found in an up-to-date New York Molokai.

DEGENERACY AMONG THE DOCTORS.

The recently enunciated theory of degeneracy is applicable to doctors of medicine, and the condition is mild or pronounced according to one's mental point of observation. One of its characteristics, which is most frequently manifested, is vanity: not the bombast and quackery of charlatans and mountebanks; not the stiffness and excessive decorum veneering over an insignificant stock of knowledge which were so transparently evident to Molière, who covered with ridicule the physicians of his day, and made these types conspicuous for all time. No, the average doctor of the present day knows more and has more common-sense than was the case with either of the types in question; besides there are few communities so deficient in perception that they would long tolerate either of them.

The doctor of to-day shows his vanity by attaching to his name on every possible occasion all the titles and distinctions that have ever been conferred upon him. He announces with his signature that he is the present incumbent of several offices, and the late or *sometime* incumbent of several more.

Ethical scruples do not prevent the doctor, who is thus degenerate, from heralding in the medical journals (and sometimes in the daily press, but this is *entre nous*) the account of some wonderful operation or some revolutionizing method of treatment, *provided* the patient gets well; otherwise the discovery dies with the patient.

Another evidence of degeneracy among doctors consists in the wild delusions that prevail concerning the exercise of charity. We do not

mean to imply that there are not many doctors who are truly charitable, benevolent, beneficent. There are many who are thus charitable to a marked degree. But there is a difference between that charity which does not let "the left hand know what the right hand doeth" and that which is announced with trumpets. How many doctors, even though they may occasionally pay for the board and nursing of interesting subjects out of their own funds, would do so if the personal, individual, selfish element, the hope of glory or gain, either directly or indirectly, were entirely eliminated? Strip off the mask, call it love of science, or, more honestly, the desire for personal advancement, which is proper enough in its place, but do not misname it charity and seek contributions from the public treasury under that misnomer. The earlier the public learns to differentiate between the true and the spurious medical charity the better for all concerned; the public will become more discriminating and the doctors more honest.

The acme of degeneracy is reached by those doctors who seek to impress the community, lay as well as professional, by the publication of statistics of methods or operations or cures. If fatal cases are mentioned at all they are usually explained away by any means other than lack of judgment, of skill, of foresight, or of proper care. Such publications confirm the appropriateness of the late Lord Beaconfield's remark that lies were of three varieties,—"lies, d—d lies, and statistics."

They invade the realm of fiction and poetry, borrowing from the *imagination illimitable*, or as an alternative, they are the product of a bad memory. One whom we have always regarded as honest recently boasted of the performance of X major operations without a fatal result. We were tempted to exclaim, *et tu Brute?* Another eminent and respected friend stated that his records had been lost, but that he thought he had opened the abdomen at least a thousand times,—an incredible number to those who are familiar with his practice. A young surgeon of this city is said to have stated to one upon whom he operated for appendicitis that he had seen two thousand cases of this disease.

Some doctors are so accustomed to exaggeration when speaking of their work that they seem to believe their own statements, and apparently seek to convince their hearers of their truthfulness. They evidently misinterpret the smile of incredulity when they reduce their statements to figures.

Statistical statements not only admit of exaggeration, but of a mysterious process of exclusion when it becomes necessary to refer to cases which have resulted fatally. Everybody knows that certain cases are doomed, whether they are operated upon or not; that with others there is a bare chance of success if an operation is performed. Suppose the operation is performed and the patient dies. The inducement may have been a large fee, or the desire and hope of relieving distress and saving life, or both. Everybody knows that either motive may sway one, and sometimes either may pervert the judgment. But the history of such cases, which is profitable alike for instruction or warning, seldom becomes known.

A further evidence of degeneracy is seen in the misleading and untruthful character of certain statements which are published in the daily papers, and which are inspired, of course, by medical authority. We do not forget that due allowance must be made for inaccuracies on the part of reporters. For example, in the New York *Times* for February 20, 1896, was an article which stated that the operation of appendicitis had a mortality of 2 per cent. We doubt whether such success is possible to even the most brilliant and most skilful surgeons, for they are the very ones who are called upon to see and treat the most desperate cases. It would be interesting to know how those cases are classified, not inconsiderable in number, in which the diagnosis is erroneous, no disease of the appendix being found when the abdomen has been opened. These evils, blights upon character, faults of morals as well as of intellect, which have been referred to, certainly without unkind feelings toward those who have manifested them, are often the product—one of the by-products, shall we say?—of success. The unsuccessful man is seldom a boaster, and has no statistics to inflict upon his hearers whenever he rises to debate a question. Medical degeneracy is therefore allied to success, at least in many instances; but it is admitted that the condition

does not vary greatly from that which often attends success in other walks of life where riches beget arrogance, luxury, and even untruthfulness. Its cure is not diminished professional assiduity, not diminished striving for ideal limits to the grand work which Medicine proposes to her votaries, but greater self-control, greater modesty of statement, and greater zeal for the absolutely and accurately truthful.

DERMATOLOGY.

A CRITICAL RESUME OF RECENT PROGRESS.

What part diet plays in the etiology and treatment of diseases of the skin is still undetermined. The difficulties involved in a proper study of the subject are very great, as idiosyncrasy enacts so large a part in the effect of any diet. "One man's meat is another man's poison" is a familiar and true saying. While there are a few diseases of the skin that are due to diet without a doubt, such as pellagra and urticaria, in most dermatoses no such connection is proved. In the last meeting of the British Medical Society diet as a factor in skin diseases was discussed in the Section on Dermatology. Dr. W. G. Smith, in his paper (*British Jour. Derm.*, 1895, VII, 309), took what seems to me the true view in regard to diet; and that is, that, although there are only a few foods which have an undoubted tendency to cause skin diseases, still an improper or insufficient diet is an etiological factor in many dermatoses, as it induces a condition of malnutrition that renders the patient susceptible to all sorts of accidents, skin diseases being among them. It is therefore eminently proper to improve the nutrition of a patient with a skin disease, by improving and regulating his diet, as well as by other means. The conclusion of Dr. Smith's paper is very commendable. He says: "Moderation and temperance in all things are the only rules for diet. The avoidance of alcohol, the regulation of the bowels, and the cure of anemia are more important than any special diet."

Bacteriological science is constantly shedding new light upon the etiology of skin diseases. One of the latest diseases shown to be parasitic is trichorrhexis nodosa. We knew very little as to the cause of this peculiar malady. It was thought by some to be due to handling the beard, by others to be a neurosis. In 1894 Hodara found a bacillus in constant relation to the disease as it occurred in the scalp hair of women in Constantinople. Now Essen (*Archiv f. Derm. u. Syph.*, 1895, XXXIII, 415) has succeeded in making pure cultures of a bacillus from a case affecting the beard, and in reproducing the disease from the cultures. The bacillus of Essen was never found on sound hairs, and it was not the same as the one found by Hodara. Unfortunately for the absolute success of Essen's investigations, he was unable to find the bacillus on the diseased hairs of the subject of the inoculation experiment. It is evident that the disease is parasitic and that the subject merits further study.

Up to a year ago it was not known that mycetoma, or the fungus-foot of India, existed in this country. It then so happened that two cases were reported in one year, one by Dr. Adami, of Montreal, to the Association of American Physicians, and the other by Dr. J. Nevins Hyde, of Chicago, to the American Dermatological Association. The disease in both cases originated in this country. Dr. Hyde's patient (*Jour. Cutan. and Gen.-Urin. Dis.*, 1896, XIV, 1) acquired it in the usual way; that is, by wading in rivers. It is a disease of slow but steady course, consisting in the appearance upon the foot of a large number of tubercles or fungoid nodules with fistulous canals leading under them down to a soft mass of tissue. The foot becomes swollen out of shape and useless. A puriform exudate, or one that resembles fish-roe, can be pressed from the tumors. It is an infective disease, due to an invasion of the tissues by the ray fungus. An excellent description of the microscopical appearances in the disease will be found in Dr. Hyde's paper.

At the last meeting of the American Dermatological Association one of the members proposed to give the name of "Pyodermia circumscripta superficialis idiopathica et traumatica" to what we have always called an "infected scratch." Our nomenclature is already overburdened, and there does not seem to be any need of a new name for so simple and self-evident a trouble as an infected scratch. There is small chance of the long and

unwieldy term ever being used, the name usually applied to the condition being all-sufficient.

In this connection the discussion over the terms leucoderma and vitiligo in a recent meeting of the New York Dermatological Society should be mentioned. Most writers on dermatology of recent times use the two terms indifferently; but at the meeting just referred to, Dr. Bronson, supported by Dr. Lustgarten, maintained that there was a distinction to be made between them; vitiligo being a definite disease, while leucoderma was only a condition that might be present in other dermatoses as well as in vitiligo. It seems better to drop either one or the other of these names, and to use the name achromia to designate the loss of pigment met with in so many diseases.

George Thomas Jackson, M.D.

ECHOES AND NEWS.

The *Medical Record* announces that the word *skiagraphs* [which, it will be remembered, was suggested by Dr. Catell in the Medical News of February 15th] is the best name that has been suggested for the Rontgen or X-ray pictures.

Dr. Nathan O. Harris, one of the most prominent physicians in Atlanta, Ga., died on March 6 from the result of an operation for appendicitis.

The Commissioners of Charity of New York city have asked the Legislature for an appropriation of $1,200,000 to be used in building a new morgue at the foot of East Twenty-sixth street, the erection of a Reception Hospital at Fordham, and the remodelling of the Almshouse buildings on Blackwell's Island.

The regular medical profession of Baltimore, Md., is somewhat indignant over the appointment of two homeopathic physicians to positions in the city medical service. The inmates of the jails will have to submit themselves to this practice or none.

The daily press brings reports of great cruelty to the inmates of Cuban hospitals by the Spanish troops. One hospital in Havana was first looted and then completely destroyed by them.

It is officially announced by the Medical Department of the University of Buffalo that its medical course, beginning with the session of 1896–7, will be extended to four years.

The directors of the New York Post-graduate Medical School and Hospital have named one of their wards in memory of the late Dr. Charles Carroll Lee, who was for many years a professor in the institution. They have placed a tablet in the ward, giving the names of those who combined to contribute the $10,000 which were given for the purpose of the memorial. The faculty of the institution participated largely in the memorial gift.

French scientists, who have been carrying on a series of experiments in regard to the vitality of microbes in books and on general printed matter, report that germs of various kinds were cultivated from the printed matter of books, and that the corners of pages where touched by the fingers yielded the most prolific results. It was shown that disease-bearing germs, such as those of diphtheria and erysipelas, retained their vitality and were capable of causing the dissemination of the diseases.

Dr. W. M. L. Coplin, professor of pathology at Vanderbilt University, Nashville, Tenn., has been elected to the chair of pathology and bacteriology in the Jefferson Medical College of Philadelphia, where until last year he occupied the position of adjunct professor of hygiene and demonstrator of pathology. The new pathological laboratory of the Jefferson will be completed by the opening of the next term, when Dr. Coplin will assume charge of this department.

The Craig Colony for Epileptics at Sonyea, N. Y., is about to be opened. The managers state that "an idea is gaining ground, not only in this, but in other States, that the State of New York is providing a large institution for the care of epileptics generally, and that all necessitous and dependent epileptics will be received and cared for. This is a grave error and should be early and earnestly discountenanced. Another growing misunderstanding is in regard to the reception of private patients in this institution. This is a feature entirely secondary in character, and is only to be entertained after all the dependent epileptics of the State have been provided for."

At a recent meeting of the New York State Board of Charities the secretary was instructed forthwith to notify in writing the individual managers of all institutions subject to the supervision of the Board, and having the care or custody of children, that corporal punishment upon such children is an abuse and an evil and must henceforth be abandoned.

The first number of the *State Hospitals Bulletin* is issued. It is to be a quarterly of 144 pages devoted to reports of clinical and pathological *data* in the several departments of the New York State hospitals for the insane, and under the management of the Lunacy Commission and the superintendents of the State hospitals. It is printed at the Utica State Hospital Print, and is published by the State. This number makes a very creditable appearance in every respect, but it remains to be seen how long the State will sustain any additional burdens in the care of its 20,000 insane other than what may be necessary for their mere subsistence.

The *Medical Record* announces that it completed its thirtieth year on Saturday, March 1st, the first number having been issued March 1, 1866. From the more extended experience of fifty-two years, the Medical

News extends its congratulations and encouragement to its still youthful but lusty contemporary.

An effort has been made by a committee of the New York County Medical Society and the New York County Medical Association to set aside the new appointments of visiting staffs to the various New York city hospitals under the reorganization by the Commissioners of Charities. The method of attack was to insist that these appointments came under the Civil-service law—requiring a competitive examination; and the matter was taken before a judge of the Superior Court. Judge Andrews has handed down his decision that the legislative act regulating the Civil Service did not intend that physicians should be subjected to the indignity of a Civil-service examination. He says: "The visiting and consulting physicians and surgeons, mentioned in the motion papers, are neither 'officers' nor 'employés' within the meaning of the so-called Civil-service acts. They receive no compensation; their positions, so far as pecuniary benefit is concerned, are purely honorary; and it is inconceivable to me that the Legislature should have intended that the most eminent members of the medical profession should be subjected to the indignity of an examination, either competitive or non-competitive, as a condition precedent to their being permitted to render gratuitious services in the hospitals which are under the control of the city. The objection that the defendants have delegated their appointing power is not tenable. They are under no legal obligation to select their appointees from the whole medical profession. They could appoint only those who had graduated from certain schools or who were of a certain age or who had had different kinds of experience; so they have a right to appoint those who have been nominated in the manner set forth in the motion papers if they see fit. Besides, they are under no legal obligation to confirm such nominees, and are at liberty to appoint others if they prefer to do so."

A Denver paper says the late Dr. Annie E. Marsh, of Greeley, Colo., bequeathed nearly all her property to the University of Michigan and her body to the University of Colorado. Her possessions included lands in Arizona, Colorado, and the East. Mrs. Marsh's husband carried out her desires as to the disposition of her body, which now lies on the dissecting-table. The University of Michigan, however, has received no intimation of the property bequest. Mrs. Marsh was for a long time a resident of Ann Arbor, and graduated from the medical department there.

At the request of Dr. Simon Baruch we insert the following correction of a typographical error occurring in the report of his paper in our issue of February 22d, 1896: "On the third line, second column, page 222, giving the mortality of pneumonia under the compress treatment devised by myself and under the usual treatment, the comparative number should be 12 per cent. under the water treatment to 77 per cent. under the ordinary treatment, instead of 12 per cent. to 17 per cent."

The legislative subcommittee of Maryland appointed to investigate her public institutions has avowed its intention to report unfavorably upon the condition of the Deaf, Dumb, and Blind Asylum of that State. When such committees are moved to disapproval there is usually good reason for their action.

The managers of St. John's Hospital, in Atlantic and Albany avenues, Brooklyn, one of the five institutions under the direction of the Church Charity Foundation, have made arrangements to open a school for trained nurses. It will be known as the Order of Trained Nurses. A rich friend of the hospital has furnished the money for the establishment of the school. The course will extend over three years.

Thirty-eight centenarians were recorded in Great Britain last year, fifteen men and twenty-three women. The oldest was Mrs. Henry, of Gortree, who died at 112, leaving a daughter of 9. In the last ten years the *St. James's Gazette* has kept track of 378 centenarians, of whom 143 were men and 235 women.

The secretary and a committee of members from the Illinois State Board of Health have gone to Chicago to examine the Dunham Medical College, and the American Medical Mission College of Chicago, with a view of ascertaining if their diplomas are eligible for recognition by the Board, as evidence of proficiency on the part of candidates for license to practice in that State. From Chicago the committee will visit Battle Creek, Mich., for a similar purpose.

By bequest of the late Mrs. Mary A. Grayden, of New York city, the sum of $6000 is donated to the Methodist Episcopal Hospital of Brooklyn, N. Y., and to the New York Home of the same denomination, in equal shares.

The following staff with their associates and assistants have been unanimously chosen by the Board of Trustees of St. Mary's Hospital, Brooklyn, N. Y., to serve for the ensuing year: Consultants—George R. Fowler, M.D., Jarvis M. Wright, M.D. Special consultants—Diseases of the nervous system, Landon Carter Gray, M.D.; diseases of the eye and ear, Arthur Mathewson, M.D.; diseases of children, Charles Jewett, M.D.; diseases of the skin, W. E. Griffiths, M.D. Consulting laryngologist—Jonathan Wright, M.D. Medical and surgical staff—Department of gynecology—John Byrne, M.R.C.S.(E.), president of the faculty; John C. MacEvitt, M.D., Walter J. Corcoran, M.D. Department of general surgery—John D. Sullivan, M.D., Charles H. Terry, M.D., J. C. Kennedy, M.D., Walter C. Wood, M.D. Department of orthopedic surgery—John C. Schapps, M.D. Department of general medicine—George R. Kuhn, M.D., secretary of the faculty; John Harrigan, M.D., J. S. Waterman, M.D. Department of nervous diseases—Lawrence J. Morton, M.D., R. S. Newton, M.D.

The medical report of the Adirondack Cottage Sanitarium at Saranac Lake, New York, for the past year states that of the 114 consumptive inmates treated,

twenty-one were apparently cured, in thirty-six the disease was apparently arrested, twenty-seven were apparently improved, twenty-seven were unimproved, and three died. Thirty-two patients were treated by injections of "modified" tuberculin, of which twenty-two were discharged. Of these nine were apparently cured, in eight the disease was arrested, two were improved, two unimproved, and one died from tubercular peritonitis. The list of contributors shows a widespread interest taken by the public in this commendable charity, and the financial statement bears evidence to efficient and economical management.

Dr. C. H. Tebault, of New Orleans, has been appointed Surgeon-general of the United Confederate Veterans, to fill the vacancy caused by the death of Dr. Joseph Jones.

Seventeen cases of diphtheria in Cecil County, Maryland, have been thought by the physicians in charge to be traceable to an infected cat. Attention also has been called to the supposed fact that nearly all stray cats and dogs are affected by one or more diseases which may or may not be communicable to mankind.

Dr. E. B. Delabarre, professor of psychology at Brown University, has been appointed successor to Dr. Munsterberg as director of the psychological laboratory at Harvard for 1896–7, and has accepted the appointment. He will not, however, be obliged to give up his work at Brown. The laboratory at Harvard is the finest in the country, if not in the world.

CORRESPONDENCE.

GLYCERIN EXTRACT OF BONE-MARROW.

To the Editor of The Medical News.

Dear Sir: In your issue of March 7th appears an editorial upon the therapeutic use of bone-marrow, in which the writer questions the value of glycerin as a solvent, and says that those persons who have had unsatisfactory results with marrow have used the medullary glyceride. So far as I can learn, there is but one other writer who takes this view of the case. On the other hand, there are a large number of physicians who have had the happiest experiences with the preparation originally advocated by Danforth.

Since I first used the glycerin preparation (considerably over a year ago) I have never had any bad results, and nothing worse than an occasional intestinal colic; and I have given it to many anemic and debilitated people with results that have been in every way gratifying. Of course there are poor preparations, for the process of maceration of the bones and extraction of the marrow is a laborious and slow one, and the temptation to manufacture weak products is very great.

Very truly yours,

Allen McLane Hamilton, M.D.

New York, March 8, 1896

THE HEARING ON THE ANTIVIVISECTION BILL BEFORE THE JUDICIARY COMMITTEE OF THE MASSACHUSETTS LEGISLATURE, FEB. 27, 1896.

[Special correspondence to the Medical News.]

The Massachusetts Society for the Prevention of Cruelty to Animals petitioned the Legislature to pass an "Act Relating to Vivisection in Schools" (House 548). A public hearing on the proposed bill was given by the Judiciary Committee of the House, Feb. 27, 1896, at 11 A.M. The following account is extracted from the stenographer's report. All unbracketed words are quoted directly. Great pains have been taken to state fairly all matters of importance.

J. A. Bailey, Jr., counsel for the petitioners (called attention to the existing act, chapter 151 of the Acts of 1894): The gist of that act is that no teacher shall practice vivisection in the presence of any pupils. We put in with our petition a somewhat elaborate bill, but we have changed our bill very radically. We come before you to-day with a simple bill in two sections.

An Act Relating to Vivisections in Schools.

Be it enacted, etc.

Sec. 1. Any agent or agents of the Massachusetts Society for the Prevention of Cruelty to Animals may be present at any experiment on or dissection of any *live* animal in any school or educational institution in this Commonwealth, and shall be permitted to witness the same; and the time and place of any such experiment or dissection shall, upon the request of any such agent, be made known to him by the person having charge of such experiment or dissection.

Sec. 2. Whoever violates this act by preventing any such agent from being present or failing to give any such agent information when requested, as above provided, shall be punished by a fine of not less than twenty dollars nor more than one hundred dollars.

George T. Angell, president of the Massachusetts Society for the Prevention of Cruelty to Animals: The law which we originally presented to you seems to us an eminently fair and proper one, but, on advice of counsel, and after consultation with various friends, we have concluded to drop three of its sections and confine ourselves to the other two. We are told through many articles in the public press and letters from students and others, the writers of which we are not at liberty to disclose, that there is much cruelty to animals in some of our medical and other schools. We simply ask that our agents—every one of whom shall, if desired, be furnished with a first-class certificate from his clergyman, or his lawyer if preferred, that he is a truthful man, of good moral character—may be present at these operations on *live* animals. (Witness now read extracts from the annual address before the Massachusetts Medical Society by Dr. Henry J. Bigelow, of which a fair idea may be given by the expressions: "Horrors of vivisection;" "Spinal marrow, the seat of all that is concentrated and exquisite in agony;" "The rumpled feathers of a pigeon deprived of his cerebellum may indicate not so much a specific action of the cerebellum on the skin as the more probable fact that the poor bird feels sick;" "My heart sickens as I recall the spectacle at Alfort in former times; a wretched horse

bound upon the floor and every conceivable and fiendish torture inflicted upon him, while he groaned and gasped;" "The limit of physiological experiment, in its utmost latitude, should be to establish truth in the hands of a skilful experimenter with the greatest economy of suffering, and not to demonstrate it to ignorant classes and encourage them to repeat it.")

(Witness then presented "a letter from a student" [Boston *Evening Transcript*, May 25, 1895], in which these words occur: "Then let it at once be known that it is the opinion of over four-fifths of the students of one of our largest medical schools that work in practical physiology on living animals is obnoxious, debilitating, and comparatively profitless; . . . not intensely interesting even to the earnest and scientific student is the sight of a small dog, weak with the loss of blood, running about the laboratory with a cork stopper in his neck. The object of this is to see how far they can carry certain experiments and have the dog still live.")

I do not know the name of this student, but I have given you his letter as printed in the *Transcript*. Gentlemen, we simply ask that the best agents we are able to furnish and employ shall have the privilege of being present wherever operations on live animals are performed, in order that we may satisfy ourselves that the laws for the prevention of cruelty to animals are not violated.

Cross-examination.—Q. What tests do you apply, if any, for the appointment of your agents? A. We select from the very best men we can get; for the last of those appointed we studied the list of the Boston police and selected a man. The captain said there was no better man on his force. We usually give some preference to men of experience in enforcing the laws. Q. But men of no scientific education? A. We can't afford to pay scientific men, you know; the dumb animals have not money enough to get very scientific men. Q. Do you take the ground that vivisection is unnecessary? A. I came here to say what these animals would say if they could talk. They would all vote against it to a man. Q. Are you familiar with experiments upon animals in these schools? A. No. Q. Are you yourself aware of any abuse or cruelty practiced on the animals? A. Only through reports and publications. Q. Your opinion, then, is formed on evidence which has been brought to you by published newspaper accounts? A. And by statements of students in medical schools and other persons. Q. Then you have never asked to be allowed personally to be present? A. No. Q. Have you evidence of specific acts of cruelty? A. I think some of these gentlemen have. I have invited certain gentlemen here who have expressed great sympathy. I don't know what they will say. Q. The purpose of the act is to select any agent, paid or unpaid? A. Yes. Q. This bill is promoted by the society or yourself? A. By the society, of course. Q. Has the society taken any action in regard to this bill? A. It has been brought before the directors. (In answer to repeated questions, witness was brought to say that the proposed bill was discussed at a directors' meeting, at which only seven out of the twenty-four directors of the society were present, and was "sanctioned" by the seven, including himself. Neither he nor Vice-President Hill could "remember whether any formal action was taken. The president had authority to take charge of the work of the society. The specific thing done here was done very largely under his general authority as president. A good many of the people who supported his society were intensely interested against vivisection. He supposed some would like to stop it and some would not, but he could not tell.") Q. Your expectation would be that you could get, if this bill were passed, such information that you could secure prohibition of vivisection? A. I will say that the dumb animals hope it would be prohibition. Q. Have you not published an offer of a reward for evidence of the abuse of the practice of vivisection? A. Yes, I have had a standing offer in *Our Dumb Animals*, which goes to almost every professional man in the State, an offer of $100 reward for evidence which will enable us to convict any man in Massachusetts of any violation of the law in the practice of vivisection. Q. Have you procured any? A. No. Q. If your agent reported that pain was inflicted in a certain experiment, would you consider that that report would be something to be acted on? A. The only question would be whether there was sufficient torture to the animals to warrant a complaint. The agent could report what he saw and heard, and it would remain with the judge whether he should grant a warrant or not.

Dr. Albert Leffingwell, of Cambridge: My experience as a physician and my experience in looking into this question convince me that vivisection has been of great service to humanity, and that, within limitations, there is no danger in its continuance. I believe in vivisection with certain limitations, but think it should be guarded against abuse; this bill is nonsense if there is no such a thing as abuse. (An extract was then read from an address by Dr. Parvin: "There are some who seek useless knowledge, and who seem to be blind to the writhing agony and terrible pain of their victims, and who are guilty of the most damnable cruelty. These criminals are not alone found in or confined to Germany or France, but may be found in our own country." Names were mentioned of physicians who favored the restriction of vivisection by law. Accounts of cruelty in Europe were given.)

Cross-examination.—Q. Do you feel that the agents of this society, with the qualification described by the president of the society, would be competent and a safe body to be the consors of the colleges of this Commonwealth? A. Not censors, but proper witnesses. Q. You have read some very harrowing descriptions of what goes on in Paris; tell us whether in your opinion that is a fair and just description of what goes on in Massachusetts? A. I am not personally acquainted with what happens in Massachusetts. I can't get into medical schools and laboratories. Q. Have you tried? A. No, I have tried in New York. Q. Have you tried in Massachusetts? A. No, it is said that no one would be allowed to go. Q. I understood you to say that unless there are abuses this bill is nonsense; have you any evidence of any abuse in Massachusetts? A. The abuses are simply these: that students are allowed occasionally

to practice vivisection on animals for their own purposes. I don't think it would be considered abuse by those having it in charge. Q. Are you sure that that is the fact? A. No, sir; only Mr. Angell says so. Q. Then I understand you have no evidence of any abuse? A. Not in this State; only that those doors are closed. Q. In your opinion could these experiments be properly conducted in the presence of agents of the societies? A. I think so; certain experiments could be. Q. Would that apply to all experiments? A. No; persons must exercise common-sense.

Mr. PHILIP G. PEABODY, president of the New England Antivivisection Society: I hold in my hand a list of physicians, I think several hundred, who are in favor of the abolition of vivisection. (Mr. Peabody here quoted several names therefrom.) The bill has been very carefully treated by those who have preceded me, and I will not spend any time upon that.

Cross-examination.—Q. Do you favor this particular bill or not? A. I do favor this bill, but I should like to have it altered so that the agents of the Antivivisection Society should be allowed the same privilege of witnessing the experiments as those of other societies. If the people of Massachusetts had the remotest idea of what vivisection really means, it would not be tolerated one month. I have seen vivisection in many instances, and I have never seen any anesthetics used. I think the anesthetics are for the public. Q. Have you observed those experiments in this State? A. I have never been permitted to observe them in this State. Q. Do you feel that a person who goes to see an operation with his mind all ready prejudiced against the whole question, a member of a society whose avowed purpose is to exterminate vivisection, is a proper man to go to such a place? A. Yes. (Witness now said in answer to questions, that he had been engaged in investigating these matters ten years, had published a good deal in the newspapers and elsewhere, and had got all the evidence bearing on this question that he could reasonably get.) Q. Have you any evidence showing any abuses in Massachusetts? A. Yes. Gentlemen come to my office almost every day and give me information concerning this, but say they don't want to be expelled from the school that they attend, as they would be if they were known to have stated these things. In a medical school in this State they take guinea-pigs in handfuls, two or three at a time, and crowd them into a vessel with a sponge of chloroform, and jam them down and put on a cover to the vessel, and sometimes the legs protrude and no pains are taken to put the legs in. (Witness declined to state where this occurred.) I have heard of many experiments performed without anesthetics. Q. Have you any other evidence? A. No. Q. You yourself have not seen any experiments on live animals in Massachusetts? A. No. Q. You were not permitted to? A. No. Q. Have you asked? A. I asked at the Harvard Medical School. (Witness being questioned further stated that six or seven years ago he had asked to see the experiments on animals, and was told none took place there. He did not know the location of the school, nor whether the person asked was an officer of the school. Thought that it was at the front door. Should say that the person asked was the janitor, not a professor. Had not been there since. Did not at that time represent the society, but went as a person interested in the subject. Could not remember that he had asked for the professor in charge of that department. Did not think he knew who the professor was at that time.) Q. Is that the only evidence you have on which to base your statements that you have been refused admission to these operations in medical schools in Massachusetts? A. Yes, the only personal evidence.

Dr. EUGENE W. HILL, of Newton. (Spoke in favor of the bill, though not opposed to vivisection. Thought that the bill would prevent unauthorized vivisection by students.)

Cross-examination.—Q. Have you any evidence that any abuses are practiced in Massachusetts in vivisection? A. Not in the laboratories; but I have been told that rabbits have been taken and tied up by the heels and hung out of the windows. (Witness said also that he had heard of students torturing guinea-pigs in barns.) If an agent goes into these laboratories he can tell very quickly those students who propose to go out and experiment by themselves. Q. How about this case you speak of—of students torturing guinea-pigs in barns; how could an agent help that; do you think he would learn in the school that a student was going to do such a thing in a barn? A. No, but I think he would learn the drift of the students' minds. Q. Does not the (existing) law provide for the suppression of this kind of cruelty? A. Yes, but it must be proved.

Mr. P. D. RICHARDS, of West Medford. (Not a physician; of no particular business. Spoke as a member of the community. Read from a manuscript so indistinctly that he could not be reported. He was understood to relate cruelties practiced in Europe, and to attack professors in the Harvard Medical School because of their alleged misrepresentation of facts. He spoke of persons in Ohio who had petitioned the legislature to permit vivisection of criminals. The vivisectors would be after paupers and babies next; babies because they were easy to handle.)

Cross-examination.—The CHAIRMAN: Are there any questions to be asked of this gentleman? (Silence of several minutes.) Mr. RICHARDS: No questions? Perhaps it is just as well that they don't ask me any questions about the Harvard Medical School or the Boston University. Q. You have something to say about the Harvard Medical School? A. I can tell of the open doors which Dr. W. T. Porter speaks of in his letter. (Replying to various questions, witness stated that he had applied for permission to be present at vivisections in the Harvard Medical School, and had been referred to the dean. On writing the dean, a secretary replied that he was in Europe and referred him to some one else, who, when witness wrote, had also gone to Europe. Had written also to the Boston University, and to Gen. Walker at the Institute of Technology. The Boston University had replied "that the doors were not open to morbid curiosity." Gen. Walker had answered

"that we were not competent to inquire into the matter and were not permitted to go there.") Q. What reason did you state in any of those letters for wishing to visit the laboratories? A. I can't say, but they could naturally infer from my articles in the papers that it was for inquiring into cruelties. Q. Are you acquainted with Dr. Richardson or Dr. W. T. Porter? A. Yes, sir. He lied to me; they all lie: all that I have met; all of them lie. Q. What are your grounds for arraigning these doctors simply because they did not want to gratify a morbid curiosity? Don't you think in the case you have stated it was a proper refusal? A. No. I met with no refusal in Cambridge, and no honest person would be refused. Q. The man who invited you knew something personally of you? A. Yes. Q. Doesn't that make an entirely different case, where a man knows the person who makes the application for such a privilege? A. Yes. Q. You are an opponent to vivisection in any form? A. Yes, a strong opponent. Q. And in the same way you are opposed to vaccination? A. Yes, I am opposed to that. Q. How many times have you been to the Harvard Medical School? A. Three or four times, including the stock-room for housing the animals. Q. How did you happen to go in there? A. I was passing the alleyway and saw them going in, and I took the opportunity to go in. I followed the cart. I went in like a man. Q. At that time you went in the back door, and after that went to the front door? A. Yes. Q. You met Dr. Porter, did you not? A. Yes. Q. And had a long conversation? A. Yes. He said they only used curs in their experiments, but immediately after that one of the students told me they used Newfoundland dogs.

Mr. Bailey, Counsel for petitioners: I wish to say that counsel regrets keenly that any epithet should have been applied to so honorable a body of gentlemen as the instructors of the Harvard Medical School.

Mr. Winslow W. Fifield, of Malden: I am in the real-estate business and have been for years, and am also a justice of the peace. I am a friend of the dumb animals. Mr. Bailey: Do you wish to testify to any facts known to yourself or on information given you? Witness: No, I do not, only I speak for the dumb animals. I would be one to contribute to a fund which should be used to employ Prof. Garner to go into the kennels of Massachusetts and learn the language of the animals there. The Chairman: We cannot go as far as that. (No questions were asked this witness.) Mr. Bailey: I think we will rest here. The Chairman: Then at the next meeting we will hear the remonstrants to the bill.

Another wing to the Free Hospital for Women, situated at Brookline, Mass., was opened last week with appropriate ceremonies.

The Culles' Home for Consumptives, of Boston, Mass., is meeting with great opposition from residents in the vicinity of its proposed location. The selection of Grove Hall has aroused objections, not only from those living near, but also from the park commissioners of that city.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Section on Obstetrics and Gynecology.

Stated Meeting, Feb. 27, 1896.

W. R. Pryor, M.D., Chairman.

THE INDICATIONS AND SURGICAL TREATMENT OF RETRODISPLACEMENTS OF THE UTERUS.

The discussion was introduced by three papers: The first by Dr. Mundé (see page 281), presenting the indications for the Alexander operation; the second by Dr. Edebohls (see page 282), treating of ventral fixation; and the third by Dr. Vineberg (see page 287), advocating vaginal fixation.

DISCUSSION.

Dr. Noble, of Philadelphia, said that if he looked at the subject solely from the point of view of the gynecologist, he would prefer suspensio uteri as being both safe and efficient, but from the standpoint of the obstetrician not so much could be said in favor of the operation. He had met with two cases in which serious distocia had resulted from the obstruction produced by the uterus at the pelvic brim after this operation. In one of these cases it had been necessary to do a Porro operation. As he was now engaged in collecting statistics regarding the complications of pregnancy and labor which follow ventral fixation, he would for the present suspend judgment. He thought any surgeon should be able to do Alexander's operation, particularly if he adopted the plan of opening up the inguinal canal. In certainly 90 per cent. of the cases ordinarily demanding a ventral fixation, the patients were over 40 years of age, so that it could hardly be said that the question of the effect of the operation on a possible subsequent pregnancy played a very important part. A very slight attachment of the uterus to the abdominal wall by sutures might give more favorable results. He had not been able as yet to see the advantages of vaginal fixation.

Dr. H. J. Boldt said that the operation *par excellence* for cases of retrodisplaced but mobile uterus was that of shortening the round ligaments. At one time he had thought quiet favorably of the operation of vaginal fixation, but now in the very class of cases in which he had formerly advocated vaginal fixation he preferred to do Alexander's operation. In cases of firm posterior adhesions, an effort was sometimes made to break up these adhesions and then shorten the round ligaments, but he felt that it was doubtful if these adhesions were usually broken up with sufficient thoroughness to allow of the uterus remaining permanently in the anterior position: hence in such cases he preferred to do a ventral fixation. Although in two of his cases one of the round ligaments had broken, the remaining one had proved equal to the task of maintaining the uterus in good position. No definite rule could be laid down regarding the number of inches that the round ligaments should be shortened; usually the ligament was shortened until the horn of the uterus appeared at the internal ring.

Dr. Ill said that in his opinion Alexander's operation

was indicated in all cases of retrodisplacement of the uterus in which, for any reason, treatment by a pessary was ineffectual. He had done about ninety ventral fixations, and had not seen a case of hernia following this operation. Three of his patients had afterward passed through pregnancy without any complication. He had been informed that fifteen cases of hernia, due to the operation of shortening the round ligaments, had been operated upon last winter at the Hospital for Ruptured and Crippled.

Dr. J. Riddle Goffe said that it had been his practice until recently to treat cases of retroversion, with or without adhesions, by shortening the round ligaments. Where there had been adhesions he had first opened Douglas' pouch and broken up these adhesions before shortening the ligaments. The only objections to this treatment had been the unpleasant scars, and he thought even this difficulty could be removed by resort to vaginal fixation. From what experience he had already had with the latter operation he was willing to assert that it accomplished an anatomical cure in a very satisfactory way, but, of course, one could not deny that the reports from abroad regarding the effect in subsequent pregnancies was rather discouraging. As the anterior vaginal wall was invariably shortened in cases of long standing retroversion, thus interfering with throwing the cervix backward into the hollow of the sacrum and allowing the fundus to come forward, he had adopted the transverse incision.

Dr. E. B. Cragin said that during the last few months he had done fifteen vaginal fixations, but he had met with a number of failures, and had not been very favorably impressed with the operation. In the future he would probably perform it only as a supplement to work already done by the vaginal route.

Dr. A. Palmer Dudley said that he did not think Alexander's operation was indicated unless the surgeon could feel sure that not only the uterus but the appendages were non-adherent and not diseased. If there were doubt on this point—and there was very apt to be—he would prefer to perform abdominal section and determine the actual condition present. In performing ventral fixation he did not consider it necessary to insert salmon-gut sutures—indeed, it was not the sutures that kept the uterus in its anterior position, but the action of the weight of the abdominal organs after the uterus had been placed anteriorly. If, after breaking up the adhesions through an incision in the cul-de-sac the uterus was restored to proper position, it could be held there by proper gauze packing without further operative measures.

Dr. H. L. Collyer said that in many cases of pregnancy occurring after Alexander's operation the ligaments had been ruptured or a miscarriage had resulted. He had followed three cases of hysterorrhaphy in which abortion had resulted from the uterus being unable to rise up out of the pelvis. It seemed to him that vaginal fixation was the best of the operations under discussion.

Dr. Joseph Brettauer said that he had been inclined to think that, although vaginal fixation was not ordinarily indicated, it might prove useful in cases of congenital retroversion, but Dr. Vineberg had stated this evening that it was in just this class that vaginal fixation was contra-indicated.

Dr. C. B. White favored Alexander's operation in cases of backward displacement or prolapse in unmarried women; but if the tubes and ovaries were diseased, it might be better to shorten the round ligaments by opening the abdomen.

Dr. A. E. Gallant referred to the pain sometimes experienced after too great shortening of the round ligaments.

The Chairman said that he believed that if there were no adhesions these cases could be cured by plastic operations alone. Following in the lead of Dr. Henroten, of Chicago, he had recently been doing some surgery through the cul-de-sac, and felt that he had obtained some cures in this way. Of the three operations under discussion, he preferred the Alexander operation, because it raised the uterus at the same time that it placed it anteriorly.

Dr. Edebohls said that on theoretical grounds he could not see that modifications of the method of operating should materially affect the result, because it was beyond our power to control the strength of the peritoneal adhesions that formed. Of the three operations, Alexander's was the only one which left the uterus free and unattached by peritoneal adhesions. There was nothing on record to show that after Alexander's operation there was any trouble in subsequent pregnancies. As much could not be said for the still very young operation of vaginal fixation.

Dr. Vineberg said that he desired to correct an impression that seemed to exist regarding Mackenrodt's operation. Mackenrodt certainly had not abandoned the operation which bears his name, for in his very last paper he refers to various favorable opinions that had been expressed regarding it by certain eminent surgeons abroad. He had only changed the technique. The speaker said that recent statistics showed that there was quite a large percentage of failures after Alexander's operation, and that the mortality was as high as 5 per cent. He felt that enough emphasis had not been laid upon the great danger of hernia after this operation, or after the operation of shortening the round ligaments by opening the abdomen. He could not but think that it was not good surgery to open the abdomen and produce one weak point, and then do an Alexander's operation, thus making two additional weak spots.

SOCIETY MEETINGS.

THIRD INTERNATIONAL CONGRESS OF DERMATOLOGY.

To be held in London, August 4th to 8th, 1896.

PROGRAM.

Tuesday, August 4th—Preliminary Business.

12.00 M. Presidential Address.
3 P.M. Subject: "Prurigo."
1. Dr. Besnier (Paris).
2. Prof. Kaposi (Vienna).
3. Dr. J. C. White (Boston).
4. Dr. Payne (London).

WEDNESDAY, AUGUST 5TH.

9.00 A.M. Clinical Demonstration of Cases.

DERMATOLOGY.

10.30 A.M. Subject: "The Etiology and Varieties of Keratosis."

1. Dr. Unna (Hamburg).
2. Dr. H. G. Brooke (Manchester).
3. Prof. V. Mibelli (Parma).
4. Dr. W. Dubreuilh (Bordeaux).

3 P.M. Papers.

SYPHILIS.

10.30 A.M. Subject: "Syphilitic Reinfection."

1. Prof. Fournier (Paris).
2. Prof. Lang (Vienna).
3. Mr. Alfred Cooper (London).
4. Dr. Fitzgibbon (Dublin).

3 P.M. Papers.

THURSDAY, AUGUST 6TH.

9 A.M. Clinical Demonstration of Cases.

DERMATOLOGY.

10.30 A.M. Subject: "The connection of Tuberculosis with Diseases of the Skin other than Lupus Vulgaris."

1. Dr. J. Nevins Hyde (Chicago).
2. Dr. Hallopeau (Paris).
3. Dr. Radcliffe Crocker (London).
4. Dr. G. Riehl (Vienna).

SYPHILIS.

10.30 A.M. Subject: "The Duration of the Period of Contagion of Syphilis."

1. Mr. Hutchinson (London).
2. Prof. Campana (Rome).
3. Prof. Lassar (Berlin).
4. Dr. Feulard (Paris).

2.00 P.M. Subject: "Ringworm and the Tricophytons."

1. Dr. Sabouraud (Paris).
2. Prof. Rosenbach (Gottingen).
3. Mr. Malcolm Morris (London).

Many contributions to this debate promised.

FRIDAY, AUGUST 7TH.

9.00 A.M. Clinical Demonstration of Cases.

DERMATOLOGY.

10.30 A.M. Subject: "The Nature and Relations of the Erythema-multiforme Group."

1. Prof. de Amicis (Naples).
2. Dr. T. H. Veiel (Stuttgart).
3. Dr. P. A. Morrow (New York).
4. Dr. Stephen Mackenzie (London).

SYPHILIS.

10.30 A.M. Subject: "Malignant Syphilis."

1. Prof. Handlung (Copenhagen).
2. Prof. Neisser (Breslau).
3. Prof. Tarnovsky (St. Petersburg).

2.00 P.M. Clinical Demonstration of Cases.

DERMATOLOGY.

3.00 P.M. Papers.

SYPHILIS.

3.00 P.M. Papers.

SATURDAY, AUGUST 8TH.

9.00 A.M. Clinical Demonstration of Cases, followed by Papers.

NOTE.—The Congress has been fortunate enough to secure for its use the building known as Examination Hall, on the Victoria Embankment. This will afford every facility for all kinds of demonstrations: cases, pictures, museum, etc. Special efforts are being made to have large clinical demonstrations of cases, and all who have been in London know how rich is the material there. It is of the greatest importance that those intending to join the Congress should notify the Secretary, Dr. J. J. Pringle, 23 Lower Seymour street, London, W., of their intention as soon as possible. The membership fee is $5, which should be sent in the form of a one-pound sterling draft on London, or P. O. order to the same amount.

GEO. THOS. JACKSON,
14 East 31st street, New York,
Secretary for the United States.

PRELIMINARY PROGRAM OF THE ANNUAL MEETING OF THE TRI-STATE MEDICAL SOCIETY.

To Be Held in Chicago, April 7, 8, and 9, 1896.

Dr. Nicholas Senn, Surgical Clinic; Dr. John B. Murphy, Surgical Clinic; Dr. J. H. Etheridge, Gynecological Clinic; Dr. F. Henrotin, Gynecological Clinic; Dr. J. M. Mathews, Louisville, public address; Dr. J. J. M. Angear, Chicago, subject unannounced; J. R. Ash, Brighton, Ill., subject unannounced; Frank Allport, Minneapolis, subject unannounced; Wellington Adams, St. Louis, "A New and Practical Method of Opening and Dilating the Eustachian Tube"; J. J. Brownson, Dubuque, Ia., "Chest Drainage in Empyema"; J. M. Ball, St. Louis, "Eye Symptoms in Brain Tumor"; G. W. Barr, Quincy, Ill., "The Use of Patent Medicines"; G. Wiley Broome, St. Louis, "The Diagnosis and Surgical Treatment of Cancer of the Cervix"; D. C. Brockman, Ottumwa, Ia., "Points in Surgical Practice"; A. H. Cordier, Kansas City, "Pregnancy Complicated by Cancer of the Cervix—Report of Case"; G. W. Cale, St. Louis, "Surgical Treatment of Brain Tumor"; F. B. Dorsey, Keokuk, Ia., "Fracture of Pelvis, Complicated with Pregnancy"; L. H. Dunning, Indianapolis, subject unannounced; C. Travis Dreneen, Hot Springs, Ark., "Gonorrhœal Rheumatism"; H. C. Eschbach, Albia, Ia., "Colles Fracture"; R. C. Heflebower, Cincinnati, "Foreign Bodies in Crystalline Lens" and "The Ophthalmoscopic Findings in Reynaud's Disease"; Webb J. Kelly, Galion, O., "The Treatment of Unreduced Fractures of the Lower End of the Radius"; Emory Lanphear, St. Louis, subject unannounced; Merrill Rickets, Cincinnati, "Anal Fistula; Peritonitis; Laparotomy; Recovery"; Adolph Meyer, Worcester, Mass., "Etiological, Clinical, and Pathological Factors in Diagnosis and Rational Classification of the Infectious and Toxic Diseases of the Peripheral Nerves, Spinal Cord, and Brain"; C. B. Nancrede, Ann Arbor, Mich., "The Operative Treatment of Jacksonian and Focal Epilepsy as Illustrated by Selected Cases"; Paul Paquin, St. Louis, "Some Recent Criticism on the Serumtherapy"; Roswell Park, Buffalo, N. Y., "Auto-infection in Surgical Cases"; J. F. Percy, Galesburg, Ill., "Special Education as a Means of Treatment in Chronic Neurasthenia"; John Punton, Kansas City, subject unannounced; F. Reder, Hannibal, Mo., "Remarks on a Partial Dislocation of the Axis"; D. S. Reynolds, Louisville, "Local Treatment of the Eye"; R. Harvey Reed, Columbus, O., subject unannounced; E. O. Sisson, Keokuk, "Ulcerative Inflammation of the Cornea"; T. O. Summers, St. Louis, "Leucocytosis: Its Relation to Modern Therapy"; W. W. Wathen, Louisville, "Pathology of Cystic Tumors of the Ovary and Broad Ligaments"; O. B. Will, Peoria, "Dysuria in the Female"; Alex. Hugh Ferguson, Chicago, "Pylorectomy in America"; D. R. Brower, Chicago, "Anemia and Its Relation to the Nervous System, with Suggestions as to Treatment"; John Ridlon, Chicago, "Flat-feet"; J. B. Bacon, "Conservative Surgery in the Treatment of Hemorrhoids"; Weller van Hook, Chicago, subject unannounced; Wm. Allen Pusey, Chicago, subject unannounced; Arthur Edwards, Chicago, subject unannounced; Frank Billings, Chicago, subject unannounced; Gustav Fuetterer, Chicago, subject unannounced; T. J. Shuell, Parnell, Ia., "The Relation of Fecal Impaction to Appendicitis"; Dr. Otto Sutter, St. Louis, subject unannounced; Dr. A. E. Mink, St. Louis, subject unannounced; Dr. G. H. Thompson, St. Louis, subject unannounced; Dr. Harry Wells, St. Louis, subject unannounced; W. C. Ussery, St. Louis, subject unannounced.

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ORIGINAL ARTICLES.

SPORADIC CRETINISM, WITH REPORT OF A CASE TREATED WITH THYROID EXTRACT.

BY H. H. VINKE, M.D.,
OF ST. CHARLES, MO.

UP to within recent years the object of the thyroid gland in the human economy was not understood. Bruecke, in his excellent work on physiology, tells us that not even an hypothesis had been advanced as to the function of that organ. It was thought that the thyroid body might be entirely excised, or completely disorganized or destroyed by some morbid process, without any noticeable changes or harmful results occurring. The failure of the older observers to determine the function of such an important organ may have been due to the circumstance that in their experiments they failed to entirely excise the gland, or to the fact that the characteristic disturbances after excision appear late, not until the secretion, stored in the system, has been exhausted. The relation between the late symptoms and the ablation of the gland may have been lost sight of for that reason. The brilliant researches of Schiff, Horsley, and Murray were rewarded with better results, however, and the profession is indebted to these patient and careful investigators for all that is known of the function of the thyroid gland. They showed conclusively that this gland plays a momentous rôle in normal metabolism—the power living cells possess of appropriating, from the ultimate products of digestion brought to them, those substances essential to their growth and development into maturity, and of maintaining their individuality after arriving at maturity. It was further proved by Ord, Kocher, and others that the symptoms resulting from an extirpation of the thyroid gland are identical with those of myxedema, a disease that was accurately described as early as 1873, but of the cause of which nothing was known. The inference that surgical myxedema, or cachexia strumipriva, was dependent upon the same cause, namely an absence or complete disorganization of the thyroid body, was but natural and unavoidable. Ord was the first one to call attention to the fact that cretinism is but a congenital form of myxedema. The great Brown-Séquard, the father of organotherapy, long since has shown that diseases arising from a lack or an absence of the normal secretion of a certain gland might be successfully treated with the healthy juice of that organ obtained from lower animals; but it remained for Horsley, Schiff, and Murray to first demonstrate the marvellous healing power of the thyroid juice in myxedema. Horsley and Schiff first proposed the treatment of myxedema and cretinism by the grafting of the sheep's thyroid; Vasale then used intravenous injections of thyroid juice; and Murray, injections of a glycerin extract of the gland. The experiments of the latter attracted by far the most attention, and were most instrumental in acquainting the medical profession with the extraordinary effects of thyroid-feeding in myxedema and cretinism. Howitz was the first to give thyroid extract by the mouth; and, as this is a very effective and convenient form of administering it, it is now in general use.

Those interested in this subject should not fail to read the valuable paper on the "History of the Thyroidtherapy," by Dr. S. J. Metzger, in *The New York Medical Journal* for April, 1895, from which I have drawn, and who gives a much more complete history of the evolution of thyroid-feeding than I have attempted. Like most discoveries in medicine, our knowledge of the function of the thyroid gland, of the disastrous results of disturbed or annihilated function and of the proper and specific remedy for the relief of those disturbances, was gained by experiments on lower animals. The researches of Ord, Kocher, and others resulted in establishing the identity of myxedema, cachexia strumipriva, and cretinism. The close relation existing between goitre and cretinism has long been suspected, cretinism being of frequent occurrence in those countries or districts in which goitre is rampant. The benign, parenchymatous goitre is of course here alluded to, and it is now thought that simple parenchymatous enlargements of the gland are the effect of an extra effort on the part of the gland to supply the system with sufficient normal secretion. In Dr. Ashmead's opinion cretinism is but the consequence of goitre. To his mind both diseases are evidences of the approaching extinction of

the human race, the closing act in the drama of human life, ushered in with goitre and brought to a gloomy close by cretinism. Opinion has been advanced that exophthalmos is the result of hyperthyroidization, or excessive secretion; and this supposition seems to be supported by the fact that by feeding myxedematous patients too large amounts of the thyroid juice, symptoms not unlike those of exophthalmic goitre are produced.

Cretinism might be defined as being a disease characterized by profound disturbances in nutrition, resulting in arrest of growth and development of body and mind, the characteristic changes in the body finding expression in a stunted and dwarfish stature and general tumefaction of the skin, those of the mind in imbecility, or even idiocy. The etiology of this disease is a varied one. It is endemic in certain mountainous regions, as the Alps, Pyrenees, Vosges, Jura, and certain districts of Central and South America. Sporadically, it is met with in nearly all countries of the globe. It has been stated that cretinism is endemic in the valleys of Vermont, Massachusetts, and California; but as an evidence of the rarity of this disease in North America, it is only necessary to refer to the circumstance that Osler,[1] in his exhaustive monograph on this subject, found that up to 1893 only eight cases had been reported in this country. Since then cases have been reported by Crary,[2] Lloyd,[3] Townsend,[4] Mills,[5] West,[6] Sinkler (two cases),[7] Fruitnight and Brown.[8] The case here related is, as far as I know, the first one treated in the West.

Altitude has been thought to play an important part in the etiology of cretinism, but cretins are found in valleys as well as in mountainous regions. Water rendered impure by an excess of magnesia, glacier water or snow-water imbibed before it has become well aerated, have been thought of as causes in the production of this disease, but cretins are found in regions where the inhabitants never drink snow or glacier water, and where it does not have an excess of magnesia or lime. Inasmuch as cretinism occurs under such varying circumstances, it may be possible that some specific *materies morbi* is responsible for its production. In-and-in-breeding, lack of sufficient and proper nourishment, and other agents that lessen the individual's power to resist disease in general will no doubt also increase tendency to cretinism. The disease may begin early or late in intra-uterine life, but usually makes its appearance between the second and fifth years.

The symptoms of this disease are so characteristic that they cannot readily be mistaken, and are clearly defined in the report of my case.

The administration of thyroid extract or juice, obtained from healthy thyroid glands of lower animals, preferably sheep's thyroids, constitutes the sole effective treatment of this rare disease. It is thought that the active principle in these thyroids is a nucleo-albumin,[1] but I do not know whether manufacturing chemists have been successful in separating this proteid from the thyroid gland.

Our little patient was first seen by me on the 2d of September, 1895, and his appearance was so characteristic that no difficulty was experienced in arriving at the diagnosis of cretinism. He was born in Missouri, close to the mouth of the Missouri river. Parents are not blood-relations. The father is healthy, 38 years of age, and immigrated from Baden, Germany. The mother is about 35 years of age, was born in this State, and has been in perfect health up to about seven years ago, since which time she has had occasional attacks of epilepsy, or seizures simulating that disease. The patient has four sisters, 10, 7, 4, and 2 years, respectively; two brothers, aged 8 years and 8 months, respectively; they are all healthy and well developed. One brother died in childhood as a result of some fever. Our patient was born 6 years ago. The labor was slow and tedious, lasting three days, but no instruments were used. The mother is certain that the period of gestation was in this case prolonged, lasting ten months. The child was born with an extraordinarily large head, large, broad face, thick lips and tongue. The mother noticed at once that its voice was different from that of the other children. Physical and mental development was slow. Was not playful like other children, took little interest in his surroundings, and could only with difficulty be made to laugh or notice things. He was 19 months old before he could stand up. The child grew thicker and gained but little in height. The limbs became crooked, fat, and clumsy; he slept much and ate but little. The mother tells us that the fecal discharges of this child were always peculiar; they were large in volume, large in quantity, and hard.

From the above history it is evident that the child came into the world stigmatized with the unmistakable marks of cretinism; and if the mother's statement as to the duration of the period of gestation is correct, it would seem that *in utero* even the development of these cretins is slow and abnormal, and that they require a longer

[1] *The Journal of Physiology*, 1894.

[1] *American Journal of the Medical Sciences*, Nov., 1893.
[2] *American Journal of the Medical Sciences*, Nov., 1893.
[3] *International Clinics*, Vol. 2, Ser. 2.
[4] *Archives of Pediatrics*, Nov., 1892.
[5] "American Textbook of Diseases of Children."
[6] *Archives of Pediatrics*, 1895.
[7] *International Med. Magazine.*
[8] *Archives of Pediatrics* for Feb., 1896.

time to arrive at a viable age than normal children. My notes at this examination describe the following state of affairs: Though 6 years of age, the little fellow is of the height of a child aged about 2 years. He has an enormous head, covered with a heavy, dirty layer of dandruff. The anterior fontanelle is as yet not closed. The expression is characteristic of cretinism; he looks very stupid, almost idiotic. His face is broad; nose flat and turned up; face and lips much swollen; tongue, also, much enlarged, and most generally protrudes from the mouth. Neck short and thick. The entire body and the extremities much swollen, and he presents an appearance not unlike that of an extremely fat baby. Arms and legs, as well as the fingers and toes, are short and

Fig. 1.

(From a photograph when first seen.)

plump. The skin over the entire body, instead of being natural, soft, and warm, is firm, cold, hard, and unpliable, and is never moist with sweat. There is no pitting upon pressure. The abdomen is enormously enlarged. Percussion and palpation do not reveal any enlargement of the liver or the spleen. Resonance is tympanitic over entire abdomen, as if stomach and intestines were distended with gases.

A side view shows marked lordosis, most prominent in lumbar region. The testicles have not descended into the scrotum; scrotum and penis small. The joints are somewhat thicker than usual and stiff. Legs are markedly curved; he walks with difficulty, and in an uncertain tottering manner, and falls readily when knocked against. The head, as already stated, is covered with a thick, dirty scum, which the mother is unable to wash away; the hair is stiff and scant, and lacking usual lustre. He walks but little; can say a few words intelligently, in an intelligible manner, and only his parents can understand what he wants. But his wants are but few, and he is always good-natured and still. He sleeps a great deal; goes to bed early, and usually sleeps until noon next day. His voice is coarse and unnatural. There is no difficulty of deglutition, but swallowing is accompanied by a peculiar gurgling noise. Dyspnea is rarely present, and never very marked. Dentition was delayed, but teeth fairly good. Hearing, taste, and smell appear to be normal. Heart normal; pulse 110 per minute; temperature slightly below normal. He never had convulsions; never suffered with hemorrhages from mucous membranes; no fatty tumors are found in the supraclavicular region. The thyroid gland appears to be absent; at any rate, we are unable to find any evidence of same. The accompanying photograph, No. 1, and the measurements taken at this examination, will show the exact condition of our patient at this time.

Such was the mental and physical condition of our patient. The diagnosis of cretinism was therefore an easy matter, and thyroid-feeding at once suggested itself. I called in Dr. J. H. Bruere, of this city, who agreed with me as to diagnosis and treatment. I also consulted Prof. Frank P. Norbury, of St. Louis, who advised the use of thyroid extract. I am greatly indebted to Dr. Norbury for many valuable suggestions as to the proper treatment of these cases, and of measures tending to improve the mental as well as physical condition of the little fellow. Immediately upon the exhibition of this remedy he began to improve, and at the close of the first week a decided decrease in weight was observed. The loss of weight was most marked during the first six weeks of treatment, and at the end of the first two months he had lost twenty-two pounds. He had gained over an inch in height. At this time I again had the boy photographed, and took measurements, which will be found at another place. The face and lips were much thinner, the legs were straight, the stature more erect, and the entire body much thinner. The skin was soft, warm, and natural. When coming to my office he had walked a distance of five blocks, which he had never done before. The anterior fontanelle was nearly closed, the hair soft and natural. The gurgling noise, when swallowing, was absent, and his voice was natural. His mental condition, too, had much improved. He is now much brighter. He can say entire sentences in an intelligible manner. He takes a lively interest in his surroundings, and delights to play with other children. But he has lost his good-natured disposition; is easily irritated. He does not sleep more than other children, and is an early riser. He has now an enormous appetite, though constantly losing

weight. To the mother it seems that the head is sunken in; that the neck is longer and the joints more supple. In one word, his general condition, physical as well as mental, has considerably improved; his appearance, however, remains markedly cretinoid (Fig. 2) The photograph and measurements taken at the last examination a few days ago, and five months after the beginning of treatment, show a decided improvement in the general condition of the little fellow. In fact, the change is most remarkable. He now has a healthy appearance. The face has a much more intelligent and natural expression. The edema of the skin and subcutaneous tissues has disappeared. The skin is soft and warm. An abundant growth of soft and natural hair covers the

FIG. 2.

(From a photograph five months later.)

head. The anterior fontanelle is closed, and all dandruff scales have disappeared. The lordosis and the prominence of abdomen are scarcely noticeable. His legs are straight, and he can now walk several miles without becoming fatigued. But for his age he is still very small, and rather clumsy in his walks and movements, and, also, intellectually he is considerably behind children of his age. But the splendid results obtained by Osler, Sinkler, Starr, Crary, West, and Lloyd, in this country, and a number of observers abroad, justify the expectation that this little patient, too, will entirely recover, and attain the somatic and mental condition of an ordinary normal child.

It will be observed that the loss in weight was most marked during the first two months, and continued until the patient had lost 24 pounds at the close of the third month, when he began to gain; the increase in height, of course, continued, and amounted to four inches in five months. During these five months he has taken uninterruptedly ½ grain of Parke, Davis & Co.'s Thyroid Extract three times a day. As no ill effects resulted, and as this amount seemed to act splendidly in our case, the dose was neither increased nor diminished. It has been pointed out by other observers that cretins bear thyroid extracts particularly well, and symptoms of thyroidism do not occur in these patients nearly as readily as in acquired or surgical myxedema. Thyroid extracts have been recommended of late in obesity, goitre, and in exophthalmic goitre. The rapid loss of weight, following the exhibition of thyroid extracts in a large number of cases of obesity, would seem to show that a lack of normal thyroid secretion is a prominent factor in the production of obesity, and that the judicious administration of thyroid extracts supplies this want. In recent years thyroid extract has been much employed by W. O. Taylor, Bruns, Kocher, and others in cases of simple benign goitre, and the results of this treatment have been found entirely satisfactory. In the young, particularly, thyroid-feeding is usually followed by a rapid decrease in the size of the tumor, or complete disappearance of the goitre. A cessation of treatment, however, has been followed by a return of the goitre. Thyroid juice has also been recommended in exophthalmic goitre, a disease which, it is now held, results from excessive thyroidization. Most observers, like Auld,[1] Eulenberg, Dr. H. W. Herman, of St. Louis, and others, have found that all the distressing symptoms of exophthalmos are aggravated by the administration of thyroid extracts, while Voisin[2] claims excellent results for the treatment.

MEASUREMENTS.

At the beginning of treatment			2 months later.	5 months later.
19¾ in.	Head.	Circumference		
12½ in.		From extr. meatus to extr. meatus	19¾ in.	19¾ in.
13½ in.		From root of nose to occip. pro.	12½ in.	12 in.
			13 in.	12½ in.
22 in.	Chest.	Measured over nipples.	21 in.	21 in.
22½ in.	Abdomen	Standing.	21 in.	20 in.
21 in.		Sitting.	22 in.	20½ in.
32½ in.	Height.		33½ in.	36½ in.
7 in.	Arm.	Circumference.	6 in.	6 in.
5½ in.		Length.	5½ in.	6 in.
7 in.	Forearm.	Circumference.	6¼ in.	6¼ in.
5 in.		Length.	6½ in.	6 in.

[1] *British Med. Journal*, July, 1894.
[2] *Gazette médicale de Paris*, 1894.

MEASUREMENTS.

At the beginning of treatment.			2 months later.	5 months later.
12 in.	Thigh.	Circumference.	11 in.	10½ in.
9 in.	Leg.	Circumference.	7½ in.	7½ in.
	Neck.	Measured around neck.	9¾ in.	9½ in.
54 lb.	Weight.		32 lb.	35 lb.

These varying results, however, are not so much at variance as they would seem to be at first glance. As is well known, continued morbid or excessive functional activity of a gland will eventually result in structural disorganization and total arrest of function. Hence it might be conceived that at one time the administration of the thyroid extract would be absolutely harmful; at another and later time, of decided advantage. There can be no doubt, however, as to the efficacy of thyroid-feeding in cretinism and other forms of pachydermic cachexia. In fact, it is the unanimous verdict of those who have had an opportunity to witness the marvellous changes wrought in these patients, that there are few diseases so amenable to treatment as cretinism, and few remedies more effective than thyroid extract.

WHAT IS THE VALUE OF OPERATIVE INTERFERENCE IN THE TREATMENT OF EPILEPSY?—BASED ON AN ANALYSIS OF SEVENTY CASES TAKEN FROM CONTEMPORANEOUS LITERATURE.[1]

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When we consider the rapid advances that have been made in surgery and localization in the past few years, we cannot wonder that the brain has been invaded in a search for the cure of epilepsy, that *bête noir* of practitioners of medicine from the very earliest time of which we can trace any record of medical matters. Again, when we think of the almost indefinite number of drugs that have been given empirically from time to time,—some of them worse than useless, others of undoubted value,—and how wide this disease has opened the door to quackery and charlatanism, we wonder even less that the poor sufferers have overcome the instinctive dread of the knife and turned to the surgeon, asking him to do what in his judgment he thought best. The zeal with which skulls of epileptics were attacked a few years ago, when the advent of antiseptic surgery and experimentation in localization, almost simultaneously, forced themselves so vividly upon our minds, has had its counterpart in other branches of medicine, notably the several "cures" for consumption, which startled the world for weeks or months and then disappeared. This comparison, however, is hardly fair, for operation for the cure of epilepsy (and in this paper I will limit the meaning of operation chiefly to trephining) is a rational procedure, and has come to stay; though that it has been very much overdone, or rather that it has been done ill-advisedly and that the cases for operation have been selected with very bad judgment, cannot be successfully denied. Happily a reaction is now beginning to set in. Any one who has had occasion to look up the literature of the past ten years must be struck by the difference in the tone of the reports of eight and ten years ago as compared with those of the last eighteen months. Formerly everything seemed to be bright, roseate, and optimistic; now there seems to be a determination to calmly and dispassionately try to arrive at an understanding as to what constitutes a cure of epilepsy. Formerly, in many journals, we would see reports headed thus: "A Case of Traumatic Epilepsy of Ten Years' Standing. Trephining; Complete Recovery," or thus: "Trephining for Epilepsy. A Report of Three Cases Cured." Then frequently, after an incomplete or confusing history of the case, in which the fit was not described with any accuracy, you would read that "the patient was trephined over the right Rolandic fissure, and, as nothing abnormal was seen, the wound was closed and the patient went on uninterruptedly to recovery." The next paragraph is probably dated four weeks after the operation and reads: "Patient having had no return of his fits, is discharged cured," the "cured" not infrequently being written with a big C. This is a true portrayal of what apparently, to certain minds, constituted a cure of epilepsy a very few years ago. At the present time the reports read differently. Men seem to be more cautious, more doubtful in claiming cures. They allow more time to elapse between the operation and the report of the case, or they frankly say that not enough time has elapsed since the operation to warrant them in saying how permanent the improvement (if there has been any) will be. The pendulum is swinging the other way, but let us not allow it to swing too far. The experimental physiologist, the clinician, and the surgeon working hand in hand will surely produce results that will lead to a more careful isolation of the operable cases, and thus establish trephining for epilepsy on a more rational and stable basis. The trouble heretofore has been that the cases for operation have not been selected with sufficient care; surgeons have reached too hastily for

[1] Read at a regular meeting of the New York Medico-Surgical Society, January 6, 1896.

the knife and the trephine; they have not reasoned thoroughly and have not discriminated well between those cases to which operation offered a probable relief and those to which it did not. Many poor, old, imbecile epileptics have had holes sawed in their skulls when it was almost as useless to think of stopping their fits as it would be to think of turning back Niagara with a dam of feathers. Again, statistics and reports of cases operated upon have been so frequently misleading because an insufficient time has been allowed to elapse after the operation to justify the opinion as to which were cured and which were not. As a rule these reports have been entirely too optimistic. This brings up the question. What is a cure of epilepsy? This is a very difficult question to answer, and one which, in statistical tables, must be determined arbitrarily. We should not lose sight of the fact that there is frequently a spontaneous remission of the fits; that a change in treatment, even though it be from some of the drugs of known value to a mere placebo, may be followed by a temporary cessation; a mere change of environment will do the same, and any operation, whether it be on the brain or on the buttock, will usually do as much.

The table upon which this article is based is made up of forty-four cases,[1] that I tabulated at the request of my friend Prof. Landon Carter Gray for his article on Epilepsy in "Nervous Diseases by American Authors," to which I have here added twenty-six cases,[2] all having been taken at random from medical journals, making seventy cases in all.

In this table I have regarded as *cured* all cases in which there has been no return of the fits within three years after the operation; *i.e.*, all cases which have been under observation for three years or more after the operation, and in which there has been no return of the fits during that period. With this as a basis I get the following results:

Cured	3
Improved	6
Not improved	14
Death due to operation	3
Improvement; return of fits; malignant brain disease	1
Cases in which there was cessation of fits one year after operation, but in which bromides were used	2
Temporary improvement; time of observation not given	3
Cases in which time of observation after operation was insufficient to make them of value in statistical tables	38
Total	70

[1] See "Nervous Diseases by American Authors," pages 304 to 311 inclusive.

[2] See accompanying table.

After a careful tabulation of these cases, and after having invariably given the benefit of the doubt to the reporter, we can only find undoubted cures in three cases (4.3 per cent.), and improvement of more than one year's duration in six cases (8.6 per cent.), while there was unquestionably no improvement in fourteen cases (20 per cent.). Surely this is not a brilliant showing. The percentage of the cured and improved together is only a little more than half as much as the percentage of non-improved. Going still further we find there are thirty-eight cases—54.4 per cent.—in which the time of observation after the operation was not sufficiently long to justify a decided opinion, though a glance at the table will show that extravagant claims were made in not a few cases. It is only fair, however, to say that in these cases there was generally an improvement, sometimes unquestionably so, though usually it was temporary. A question which, to my mind, seems *à propos* is, How much of a probable improvement will justify resorting to so serious an operation as trephining? I know some surgeons will smile and probably throw up their hands in amazement when I speak of trephining as a serious operation, for I have frequently heard the rather flippant remark that trephining under present antiseptic conditions could not be considered dangerous. In answer to this I will only point to my table, where we find three deaths—4.3 per cent.—directly due to the operation; not a small mortality for an operation devoid of danger. The best answer which I can suggest to my question is, Never hastily decide on an operation; take carefully into consideration the patient's environment and his position in life; consider how much his epilepsy interferes with the performance of the duties of life; how far it has been, or probably can be, controlled by drugs; then, if it is an operable case and you think the probable benefits will outweigh the risk involved, operate. When we think how few cases my statistics record when compared with all the cases that have been operated upon, we must easily see how many, many persons have been subjected to this operation when it was useless to expect benefit. It is needless at this time to call your attention specifically to cases of this kind in the table; it does not take a trained eye to detect them. How much better it would have been had these cases not been operated upon! This enormous amount of dangerous work would have been avoided, statistics would have been more accurate, and there would not be so great a preponderance of cases on the wrong side of the

No.	Reported by, or Operator.	Date of and Character of Trauma.	Interval between Trauma and Appearance of Fits.	If no Trauma, Age at which first Fit occurred.	Character of Fits.	Interval between and Number of Fits before Operation.	Interval between first Appear'ce of Fits and Date of Operation.	Date of Operation.	Kind of Operation.	Lesion Found.	Interval bet. Operation and First Fit thereafter. Number of Fits thereafter.	Result as stated by Reporter.	Length of Time under Observation after Operation.	Reference.	Remarks.
45	J. Allison Hodges.	When one yr. old. Elevation on left parietal bone above temple ridge. Fell on wooden block.	One week. Next six months' aft'rward.	.....	Not given, though suppose convulsions were general.	For two years before operation, as many as 19 daily.	19 years.	.....	Trephine over seat of injury. Dura detached.	Dura firmly adherent, thickened, congested and vascular.	Two slight attacks about 6th day.	.....	1 month.	*Virginia Medical Monthly*, 1894–95, xxi, 942–947.	Time of observation insufficient.
46	J. Allison Hodges.	1864; minnie ball. Depression above and parallel to horizontal line of left squamous suture.	Six months	.....	*Petit mal.* Increasing loss of memory.	As many as 5 or 6 daily.	30 years.	.....	Trephine.	Both tabl's increased in thickness; dura not adherent.	One same night; two more 3 days later.	Slight aphasia and paralysis of one leg about 10th day, but are now passing away. Great improvement in memory.	6 months.	*Ibid.* and *N. Car. Med. Jour.* 1895, xxxv, 33.	Improvement as to memory.
47	J. T. Boutelle.	Five yrs. old; head cut with ax; 16 years old, blow on head from fist. Linear depression, 2 inches long over middle of ant. ¼ of left parietal bone.	"Shortly after" second injury. Increased in severity.	.....	Not given, but suppose they were general.	One to 3 weekly.	2 years.	.....	Trephine. Removal of piece of bone projecting downward to dura.	Piece of bone pressing on dura.	One week.	For six months no fits. Hears they are now "as bad as ever."	6 months.	*Virginia Medical Monthly*, 1894-5, xxi. 813–824.	No improvement.
48	J. T. Boutelle.	Six years old, blow on head; depression of bone.	Ten years.	.....	At first *petit mal*; afterwards severe and "convulsive."	Frequent.	23 years	.....	Trephine. Removal of depressed bone.	Depressed bone; dura slightly adherent.	One week after operation; acute mania due to excitement; fits 2 months	"Now are as bad as ever."	2 months.	*Ibid.*	No improvement.
49	W. Alexander.	1884. "Sunstroke." Injury to left side of head. "Depressed scar."	"Soon after."	.....	General tho' right side, especially right arm more affected. Memory dull.	As many as 7 daily.	4 years.	Oct. 1888	Trephine over depressed scar. Calvarium 3 in. square removed.	"Appeared to have been periostitis, and some erosion of bone, with adhesion of skin to calvarium."	Seven days. Not so frequent as before. Mental condition much improved.	"Distinctly improved. Able to work on a farm."	5 years.	*Brit. Med. Journal*, 1893, ii, 1149–52.	Improvement but Was kept on borax for a long time after operat'n.

No.	Reported by, or Operator.	Date of and Character of Trauma.	Interval between Trauma and Appearance of Fits.	If no Trauma, Age at which first Fit occurred.	Character of Fits.	Interval between and Number of Fits before Operation.	Interval between first Appear'ce of Fits and Date of Operation.	Date of Operation.	Kind of and Location of Operation.	Lesion Found.	Interval bet. Operation and first Fit thereafter. Number of Fits thereafter.	Result as stated by Reporter.	Length of Time under Observation after Operation.	Reference.	Remarks.
50	W. Alexander.	December, 1888. Struck on left side of head between parietal eminence and occipital protuberance.	6 weeks.	.....	General and *petit mal*. Memory and sight failing."	As many as two in one day.	3½ mos.	May 15, 1889.	Trephine. Scar raised from bone	Ridge of bone under line of scar. Dura adherent to ridge, but elsewhere smooth.	Thirteen days. One grand and several *petit mal*.	.....	1 month.	*Brit. Med. Journal*, 1893, ii, 1149-52.	Length of time under observation after operation is insufficient.
51	W. Alexander.	1876; wound of right temple.	Immediately after and for 3 months. Recover'd. No more for nine years when had "epileptic" convulsions.	.....	General. Became stupid.	Two to 15 monthly.	13 years.	1885 & '89.	1885, trephine "without effect." 1889, spicule of bone removed. 1889, dura opened over seat of old trephining, cyst evacuated and drained.	Diffuse cystic condition of dura, inclosing atrophied cerebral convolutions.	Not given.	Improvement at first. Afterward very much worse mentally. In 1893 showed distinct improvement.	3 years.	*Ibid.*	Improven'nt.
52	W. Alexander.	.....	.....	17 years. "Due to exposure to the sun and excitem'nt."	"Looked upon it as one of hystero-epilepsy." Drooping right eyelid, premonitory convulsive movem'ts of right foot.	Not given.	13 years.	Dec., 1891.	Over left motor area. Two one-inch trephine holes 3 inches apart, and intervening bone removed	"Dura seemed healthy," and was not opened.	Occasi'nal headac'es; "Ptosis and newly developed int strabismus of right eye."	"There is no doubt she has benefited by the operation."	27 days, and then "for some time" under care of a colleague in same hospital.	*Ibid.*	Time of observation after operation insufficient.
53	W. Alexander.	December, 1890. Blow on the head. Depressed, curved cicatrix 3 in. long, crossing vertex.	4 weeks.	.....	Visual and gastric aurae, vertigo, general convulsions. Irritable temper.	Two weekly.	12 months.	December 9, 1891.	Trephine. All depressed bone removed.	Thick, dense b'ne press'g on dura, near median line. Dura healthy.	Twenty-four days; Then two more in next fifteen days.	.....	2½ mos.	*Ibid.*	On February 29, 1892, patient reported fits had returned. No improvement.

No.	Reported by, or Operator.	Date of and Character of Trauma.	Interval between Trauma and Appearance of Fits.	If no Trauma, Age at which first Fit occurred.	Character of Fits.	Interval between and Number of Fits before Operation.	Interval between first Appear'ce of Fits and Date of Operation.	Date of Operation.	Kind of and Location of Operation.	Lesion Found.	Interval bet. Operation and First Fit thereafter. Number of Fits thereafter.	Result as stated by Reporter.	Length of Time under Observation after Operation.	Reference.	Remarks.
54	W. Alexander.	.....	.....	Patient 15 years old. Fits since infancy.	*Petit* and *grand mal*. "Congenital and epileptic convulsions." Nystagmus, stammering. Aura in left thumb.	Numerous daily.	15 years.	January 3, 1892.	Trephine over right motor area, 2 1-2 inches by 2 inches, removed.	"Nothing was found exce't considerable amount of fluid."	"During March, '92, the fits left him," and until July, '93, only two attacks of *petit mal*.	"Patient is bright, active, intelligent, and so far operation has been a success."	18 months.	*Brit. Med. Journal*, 1893, ii, 1149-1152.	Improvem'nt
55	W. Alexander.	Depressed fracture, upper extremity of parietal and adjacent occipital bone, right side. Injury not recent.	Not given.	.....	"Attacks mixed. Began mostly on right side."	Not given.	Not given.	Nov. 29, 1892.	Trephine. Cyst drained.	Calvarium imperfect at one spot; atrophied convolutions and enlarged veins.		"Fits much less frequent and mother says are lighter."	Reporter saw patient last on Oct. 21, 1893.	*Ibid.*	History insufficient. Observation insufficient.
56	W. Alexander.	"Bump on top of head," middle of left parietal bone; 2 in. below median line, forward to left frontal bone.	.....	No history of trauma.	*Petit* and *grand mal*, mostly the former; goes down on knees, unconscious. In a moment get up confused, laugh and go on at play.	Numerous daily.	"Many years."	June 15, 1892.	Trephine. Removal of one sq. inch and a half of thickened bone.	Fibrous layer, 1 1-2 in thick, covering the bone. Bone 1 1-2 in. thick, and dura thicken'd.	"Attacks diminish'g month by month; usually 1 daily, but several days have passed without any."	I look upon this case as very hopeful.	16 months.	*Ibid.*	Report seems to show slight improvement. I think reporter takes too roseate a view.
57	W. Alexander.	1888. Scar over right motor area.	"Soon after."	.....	Left side of face and left hand. Headaches.	Numerous	5 years.	Febru'y 2, 1893.	Trephine over right motor area.	"Some excess of fluid was found; otherwise normal."	Not given. July 29, '93, "quite bright and intellige't, in contrast to previo's depressed state."	"Headaches disappeared, fits much less frequent." "Oct. 21, '93, still improving."	8 1/2 mos.	*Ibid.*	History not complete. Subsequent observation insufficient. Reporter takes too roseate a view.
58	W. Alexander.	.....	.....	"Congenital imbecile epileptic," 11 years old.	"At first were one-sided."	Not given.	11 years.	March 2, 1893.	Trephine. Removal of depressed bones, 2x2 ins., over left motor area.	Depressed bone. "Excess of clear fluid beneath dura." Convoluti's looked healthy."	.....	July 29, '93—Child is much improved, learning to spell, and has had fewer attacks since operation.	1 1/2 mos.	.....	History is not complete. Time of observation insufficient.

No.	Reported by, or Operator.	Date of and Character of Trauma.	Interval between Trauma and Appearance of Fits.	If no Trauma, Age at which first Fit occurred.	Character of Fits.	Interval between and Number of Fits before Operation.	Interval between first Appear'ce of Fits and Date of Operation.	Date of Operation.	Kind of and Location of Operation	Lesion Found.	Interval bet. Operation and First Fit thereafter. Number of Fits thereafter.	Result as stated by Reporter.	Length of Time under Observation after Operation.	Reference.	Remarks.
59	J. T. Eskridge.	1866. Blow on left side of head.	10 years. Second fit one year after.	.....	Numbness and tingling right thumb and fingers, hand, and throughout right side. Convulsive movem'ts then became general.	Daily for 3 or 4 years before.	18 years.	March 30, 1894.	Trephine over middle one-third of Rolandic fissure. Cortex 1 in. in diam. by 1/2 inch thick, including centr's for th'mb and index fing'r excised.	Bone thickened, but no fracture, or adhes'n of dura.	Seventeen days. Fit produced by rubbing cicatrix of wound. Another fit next day.	Marked improvement in appearance and mental condition. Paralysis right hand and arm, and lower part right side of face.	2 1/2 mos.	Tr. Col. Med. Soc., 1894, 343-358.	Time of observation after operation insufficient. Evidently no improvement as to fits.
60	J. T. Eskridge.	April, 1890. Fracture of right parietal bone and depression.	7 months. Second fit 12 days after.	.....	Specks before eyes, unconsciousness, falls; contraction of left hand, and left foot jerks. Then become general.	One or two weekly.	10 months.	Sept'ber 6, 1891.	Trephine over seat of injury and removal of depressed bones.	Depressed bone, 2 in. long, and 3-4 in. in width.	One week; 2d, one month; then one every two or three months; there was a cessat'n for 6 mos. in '93 and '94.	Greatly relieved. Mental condition much improved.	2 yrs. and 9 months.	*Ibid.*	Improvem'nt.
61	J. T. Eskridge.	.....	.....	When two days of age had spasms for 2 days.	"When 3 yrs. old developed epilepitc attacks. . . . Would fall on right side of face."	From 1 in two weeks to 2 or 3 daily.	Nearly 4 years.	October 9, 1891. 1893.	Lin'r Craniect'y on right side. Some mos. afterw'rds the same on left. A strip of bone 1/2 in. by 2 over left Rolandic fissure removed.	.....	Lessened fits for a year after first operations, then recur'd with considerable frequency.	Convulsions ceased for some time, but have since recurred. Mental improvement.	About two years.	*Ibid.*	This was an idiotic child, evidently of the porencephalic class
62	Walker.	1874. Struck on head with scissors.	19 years. First fit followed by physical and mental excitem't.	.....	Begin on right side, and become general.	Two to five daily.	About one year.	1894.	Trephine: Evacuati'n of cyst. Spicule of bone removed.	Cicatrix 1 in. long, above left parietal eminence. Fissure in bone, cyst admitting ind. finger spicule of bone.	Not given.	Doubtful.	4 weeks.	Cincinnati *Lancet Clinic*, 1894, N. S., xxxii, 174.	Time of observation after operation insufficient.

No.	Reported by, or Operator.	Date of and Character of Trauma.	Interval between Trauma and Appearance of Fits.	If no Trauma, Age at which first Fit occurred.	Character of Fits.	Interval between and Number of Fits before Operation.	Interval between first Appearance of Fits and Date of Operation.	Date of Operation.	Kind of and Location of Operation.	Lesion Found.	Interval bet. Operation and First Fit thereafter. Number of Fits thereafter.	Result as Stated by Reporter.	Length of Time under Observation after Operation.	Reference.	Remarks.
63	Wood and Cotterell.	1891. Fell from hay-rick. No apparent injury at the time.	Ih a few weeks had what appeared to be epileptic fits.	.....	Always began in right thumb and finger; became unconscious. Paralysis of right arm and leg.	.....	About 2½ years.	Febry 2, 1894.	Trephine over mid-dle of left Rolandic fissure. Cyst drained.	Serous cyst under thickened, and adherent over cyst.	Not given.	March 17, '94. Walks without support; had opened sponta-neously. No fits since operation. Left hemiplegia remains	6 weeks.	*Brit. Med. Journal*, 1894, i, 10.	Hemiplegia withepilepsy. Improvement. Time of observation not sufficient to justify prognosis.
64	Carline.	1888. Injury by scar to head from fall of iron girder and rubbish. Unconscious one week.	3 years; followed excessive physical fatigue.	.....	Spasm of left face, both eyes to left, and then body became flexed to left. Forgetful; violent temper.	Four to five daily.	5 years.	July 4, 1893.	Trephine. Two discs of bone 1 inch in diameter removed from over right motor area. Dura not opened.	Ridge of bone, 1½ ins. by ½ in., back-ward from centre for elevator in angle of mouth. Periosteum dipped into adherent bone. Smooth growth of bone trimmed flat. Dura rough, adherent over lower extremity of ascending convolution.	One slight fit next day, but none subsequently.	Cessation of fits although could not have been more than six months, as case was published July 7, '94.	Not given.	*Brit. Med. Journal*, 1894, i, 98.	Patient became childish, mischievous, very forgetful, and violent temper" after accident. On a journey lost his way and had to tramp 75 miles. Time of observation after operation is short.
65	R. H. Cunningham.	1892. Struck with a brick 6 days after injury. Comparatively slight injury on left side of head anteriorly.	Numerous. Complete paralysis of right side and of speech. Operation 6 days after injury. More or less complete recovery of power and speech, though fits still occur.	.....	Numbness and tingling, right hand. Thumb turns in; convulsions of arm, shoulder, and face; head and eyes to right; speech lost; consciousness retained.	Two weeks.	About two years.	January 20, 1894.	Trephine and tem-porary Paraspeni-cal over Rolandic. Adhesions broken up and part of dura removed.	Large, adherent cicatrix, 1 in. behind and 3½ ins. above left ext. ang. proc. Dura thickened, and membrane adherent over post. central, pre-central, post. tip of 2d frontal, centre of old cicatrix, & over lower extremity of ant. central.	Not given.	Cessation of fits although could not have been more than six months, as case was published July 7, '94.	Not given.	*N. Y. Med. Journal*, 1894, ii, 15.	Improvement. Time of observation after operation is short.

66	Ellingwood and Fischer.	1882. Injury to left frontal region. Fever and almost constant headache for 2 1-2 months.	4 months.	.....	Sense of weakness in right side; right hand cramped, arm raised, wrist flexed and rotated inward to extreme limit, head to left.	About nine yearly.	10 years.	July 1, 1892.	Trephine over hand centre, left side; dura opened. Aug. 26th abscess at side op'ration; curetted and drained.	"Nothing abnormal found."	First fit same day, and six more in a mo'h. After second operation fits ceased for two months.	.....	5 months.	*Pacific Medical Journal*, '93, xxxvi, 65–70.	No improvement.
67	Geo. W. Cole.	Blow over Rolandic fissure when 9 years old.	3 years.	.....	Hands first, feet and lower extremities. General convulsions.	At intervals.	2 years.	Not given.	Mallet and chisel. Bone large as 5c piece removed from over upper end left Rolandic fissure.	.....	.....	Too soon to report case, but he is inclined to believe relief will be permanent.	.....	*St. Louis Clinique*, 1892, v, 44. Abstract of rep'rt to St. Louis Med. Soc.	Time of observation after operation insufficient. Cannot see what he bases his belief on.
68	J. I. Darby.	When 1 years old struck by sharp stick on left side of head.	About 12 yrs. old.	.....	General, but right side affected more than left; mind becoming affected.	Occasional fits for 3 years, but had been getting worse lately.	3 years.	Not given.	Trephine. One-half inch button over most depressed portion removed. Dural adhesions brok'n up.	Depressed cicatrix over middle of left parietal bone; dural adhesions.	.....	For several months frequently felt aura, and had giddy sensations, but they disappeared entirely, and to date no fits. Mind also cleared up.	6 to 7 yrs.	*Alabama Medical and Surg. Age*, Anniston, 1891–'92, iv, 113–116.	Cure.
69	W. B. Rawson	1885. Knocked down and rendered unconscious.	One day.	.....	Tingling left thumb; spasm of left thumb, arm, shoulder, face; consciousness usually lost. 1886—Probably meningitis, after which visual aura. 1891—Impairment of motion, and sensation in left hand; smell lost; nearly blind.	Increased in number.	Six years.	April, 1891.	Trephine 2½ inches d'wn right Rolandic line. Thickened dura cut aw'y, bone discs replaced. Mch., 1892, sec'nd operation. Bone discs and adhesions removed.	Cystic accumulati'n of fluid 1 in. in diameter between pia and thickened dura.	Fewer fits after first operation, but they soon came back. H'd-aches.	April, '93—No pain, being few and slight fits.	About one month after second operation.	*Brain*, '92, xv, 437–442.	Faradization over the site of trephining. Improved motion and sensation. Apparent improvement in fits. Time of observation too short.
70	R. Parker and F. Gotch.	October, 1891. Injury to right side of head.	3 weeks.	.....	Tremor and twitching of left hand, forearm, head, eyes turned to right. Only mom'tary unconsciousness, but in June, 1892, was first kno'n to fall.	Twenty to 30 daily.	One year.	Dec., 1892.	Trephine over right Rolandic fis'e, 1x1½ ins. bone removed, thumb & wrist centres isolated and excised.	Apparen'y none; not stated.	Nine fits the same day.	March 6, '93—Had reported 4 to 10 fits daily. "Since then improvement has taken place."	5½ mos.	*Brit. Med. Journal*, 1893, i, 1101-1103.	Horsely had suggested an excision of the shoulder area. Time of observation too short,

column. As I have said before, the percentage of cured and improved is not great. It is not so small, however, that we should feel discouraged, and we should not for one moment think of abandoning the operation. Let it rather stimulate us to greater zeal in the selection of our cases, to train our minds to a nicer discrimination between the operable and the non-operable; and we will find much more glory will be brought to our profession, much more confidence begotten in the minds of the laity, just as much suffering relieved, and fewer lives jeopardized. In these matters the skill and judgment of the physician will, of course, be the most powerful factors, but there are certain broad principles which should always be borne in mind:

(1) Always consider an epileptic fit as a symptom of some underlying condition. (2) Inquire particularly and very carefully about the first convulsion: What was its apparent exciting cause; what was its character, general or affecting only certain portions of the body, and what portion of the body was affected at the beginning of the fit? (3) If there was an aura, investigate it carefully, as it will not infrequently give a clue as to the seat of the lesion. (4) If there has been a trauma or a suspicion of trauma, shave the head and look carefully for a scar or a depression. If there is evidence of a trauma in a position corresponding to the initial symptoms of the fit, an operation is usually justifiable. (5) If you cannot get a clear history of the case, give a placebo and place the patient under competent surveillance until you can satisfy yourself as to the character of the fits. (6) Do not operate on a porencephalic child and expect to cure the epilepsy. Do not, as a rule, operate on a case of post-hemiplegic epilepsy in a child and expect to cure. (7) Do not operate on an old, idiotic epileptic, a victim of idiopathic epilepsy, with general convulsions of years' standing.

What, then, is the value of operative interference in the treatment of epilepsy? In the light of our present experience, I think it will be fair to put it thus:

a. A certain small percentage of the cases will be cured.

b. A certain larger percentage will be improved.

c. An even larger percentage still will not be improved at all.

d. An operation upon almost any case will produce a temporary cessation of fits.

Dr. Otto H. Schultze has been appointed coroner's physician of New York city to succeed Dr. Huber, who recently resigned.

CLINICAL LECTURE.

RACHITIS AND MALNUTRITION.—CARCINOMA OF LIP AND JAW.—FRACTURE OF BASE OF SKULL.

(Delivered at the Buffalo General Hospital.)

By ROSWELL PARK, A.M., M.D.,
of Buffalo, N. Y.;
Professor of Surgery, University of Buffalo.

Case 1.—This child, aged five years, is the youngest of five children of a family in very poor circumstances. He has been brought to the clinic to have us ascertain why he has never been able to walk, and to relieve him if possible. This case is not typical of any one lesion, yet we can readily make out that rachitis exists, and perhaps it will be more instructive to show you an atypical case than one which you could scarcely fail to diagnose properly.

As I hold the child in a standing position, you will observe the aldermanic protrusion of the abdomen; but this is not due to fat, for the child is not very well nourished. The liver is large and prominent, and the flabby abdominal wall allows the distended stomach and intestine to project beyond the meagre outlines of the rest of the trunk. Although the child has instinctively contracted the abdominal muscles so as to oppose my efforts at palpation, I can still feel the spleen to be somewhat enlarged. The shape of the head is not very characteristic, though the squareness of the occiput and the prominence of the occipital and parietal bones are readily distinguished. In spite of his age, the anterior fontanel has not yet closed. In examining for it, I find corroborative evidence of the neglect which often leads to rachitis in the presence of parasites. The lower part of the face is not deficient as it is in typical cases of rickets, and the teeth are now in a nearly normal state, though their appearance was very likely delayed; of this we can obtain no reliable information. The chest shows one of the mechanical signs of the disease in the flaring out of the lower ribs. Below the thorax you notice a transverse groove, which is more marked in inspiration, on account of the laryngeal obstruction which usually complicates this disease to a greater or less degree. I can feel the relics of protuberances at the junction of the ribs with their cartilages. The same condition in a higher degree is known as the rachitic rosary. The arms and legs are shrunken and the legs notably deficient in development, considering the age of the child. The bulging at the epiphyseal lines and the bowing of the tibiæ and femora are not well marked here, doubtless because there has not been the ability to walk and thus subject the growing bones to the weight of the body before they were in condition to support it.

Rachitis is essentially a disease of nutrition. We do not see in Buffalo the number of severe cases that present themselves in larger, and particularly in more crowded, cities, for we must remember that our city, though twelfth in order of population in the United States, enjoys many of the hygienic advantages of towns of ten thousand inhabitants. Although mild grades of rickets are common, even when we can assign no definite hygienic reason

for it, typical cases are relatively rare in the United States. On the other hand, 80 per cent. of the children who are brought to the dispensaries in London and Vienna are rickety. Not to mention the scientific etiology of rachitis, we may say that its cause is neglect — the neglect of ignorance and carelessness, or the forced neglect of poverty. Hence, other things being equal, we find the most marked and most frequent illustrations of rickets coincident with the grossest ignorance and the deepest poverty. The symptoms of the disease usually manifest themselves at the period of first dentition. As to treatment, the first indication in such a case as this is to make the child clean and comfortable and to supply it with nourishing food in proper quantities and at proper times. Of the tonic treatment designed especially to stimulate the development of bone I do not care to speak at present, as you are undoubtedly familiar with it from your medical lectures.

Case II.—Our first operative case is a pitiable example of neglect. The patient, a man of 45, had a cancer removed from the lower lip three years ago. Whether the operation was thoroughly done or not, we have now no means of ascertaining. Some time after the operation, however, he noticed a mass involving the lower jaw, which has been allowed to grow till his condition is now very serious. He has also some facial paralysis on the side of the tumor. Such paralysis may be due to atrophic changes produced by pressure on the seventh nerve in a variety of ways; but in a case of this sort we would naturally ascribe it to the presence of the cancer, though the possibility of inflammatory trouble in the passage through the temporal bone, or of other lesion which might occur in a person not the subject of malignant disease, must not be forgotten. I presume, however, that the paralysis is due to the pressure of the cancerous mass at some point after the nerve has emerged from its foramen. I have told the patient that the operation may not be ultimately successful, and that he may even die as the immediate consequence of an attempt to remove the mass, and that any operation which could be seriously considered as affording him a chance for relief will involve the sacrifice of half the jaw-bone. Notwithstanding that I have given him no encouragement as to the result of the operation, he has not been deterred, and has almost insisted on my giving him whatever chance surgery can afford.

Case III. This patient was struck yesterday by a Belt-line train. He suffered severe contusions about the head and he has been bleeding from the ears and nose, so that the question has arisen as to whether there is a fracture of the base of the skull. If there is a depression of the outer table, we shall know where to look for a possible depression of the inner table also, yet we must bear in mind that one table may be broken without a corresponding lesion of the other. If the inner table be broken, a meningitis may develop on account of the irritation caused by the pulsation of the brain against the sharp edge of the broken bone; again, if an acute meningitis is not thus caused, a localized chronic form may develop, with thickening of the membranes and sclerosis of the cortex in immediate contact, and then we have all the conditions favorable to the development of epilepsy later on. Thus it is at present considered good surgery to make an exploratory trephining in any such case, to remove the depressed fragments or restore them to their proper level, and then allow the case to go on to a perfect recovery—perfect at least so far as the result of the operation is concerned, for aseptic interference need produce no trouble nor add to the gravity of the case.

The one great lesson to be learned from cases of this sort is not to trust too much to nature. We must also be cautious about giving too favorable a prognosis and about judging the condition of the inner table from external appearances. I can recall three or four cases in which the outer table was absolutely intact, except for a slight fissure, when there was no loss of consciousness, and yet the result of operative interference showed that the inner table was depressed and amply justified the exploratory trephining. If these cases had been left to nature, either acute meningitis would have developed (when the patient would almost certainly have died) or else the later fibrous changes would have led to epilepsy.

Once in a while it is better to leave the patient to the chance of a spontaneous recovery, rather than to operate without proper preparation. It does not require much attention to aseptic details, however, when it is only necessary to go through the skull without penetrating the dura. Often we have had patients brought to the Fitch Hospital with penetrating wounds of the skull filled with cinders and dirt, and we have cleaned out the foreign matter, sewed the wound without drainage, and had union in thirty-six hours. We could not expect such a result in other parts of the body, but the vascularity of the scalp is such that phagocytosis is at its greatest activity, and so, too, is the reparative power of the cells. It is necessary, however, to remove the foreign matter absolutely and render the field of operation thoroughly aseptic in order to have union by first intention. Still, if you are so situated that perfect asepsis is impossible, the patient will, in all probability, recover if the brain is not exposed.

You will notice swelling and redness about the eye. This is due to the extravasation of blood into the large amount of loose cellular tissue that surrounds these parts. The wound is a curvilinear tear over the right anterior parietal region. I will enlarge the wound, carrying the incision in a horse-shoe shape. I am now down upon the fracture, which is simply a fissure in the bone, into which I can merely drive the flat end of a probe. We cannot tell how large the fracture may be in the internal table. With the chisel I detach a long sliver of bone, starting just above the orbit and running parallel to the fracture. Now, under the force of the mallet striking the chisel, fifteen or twenty cubic centimetres of clotted blood and grumous material well up from beneath the bone, having been lodged either beween the skull and the dura or between the dura and the pia.

The appearance, now that I have penetrated the bone, shows the wisdom of interference. The innocent-looking fissure has led down to a wound in the brain tissue, from which there is still considerable oozing of blood. I am trying to stop the hemorrhage by stuffing gauze into the

wound. Now, after biting off the margins of the bony opening with the rongeur, I have exposed the smooth, shining surface of the dura, from which the brain protrudes in a mass as large as a hickory-nut. The pulsation can be plainly seen in the protruding cerebral tissue, but not in the dura. Most of the hemorrhage comes from a vein in the dura, and this I will ligate with fine catgut.

The suspicion of fracture in the middle fossa of the skull, on account of hemorrhage from the ear, renders the prognosis much more guarded than it otherwise would be. There is some dilatation of the pupil on the right side that makes me suspicious of a clot on the opposite side of the brain. Still, in the absence of paralysis, I do not feel justified in trephining on the other side. We shall therefore await developments. The pulsation in the brain is beginning to be more free; it is slow, corresponding with the pulse—40 to 50.

There is some hemorrhage from the margins of the bone, which I shut off by pinching the bone together with forceps. Some little bleeding points that remain I close by pressure with a sharp-pointed probe.

In a case like this, when it is certain that there will be some inflammatory exudate, it is a great mistake to tightly sew up the dura. By so doing you increase the pressure on the brain and to that extent defeat your object in operating. As the exudate organizes, the wound in the dura will unite. Neither do I believe that there is any necessity in cutting off the protruding mass of brain tissue. I shall simply tuck in gauze so as to cover the dural wound and then dress the remainder of the wound in an antiseptic manner, uniting the scalp in part, but leaving room for drainage.

I have seen two or three cases of undoubted basal fracture which recovered without operation, and in which, from the pressure signs, there must have been some hemorrhage. Laplace, of Philadelphia, has recently operated on such a case, churning up the clot and evacuating it; but it may be questionable whether the case would not have recovered without operation, and, thus far, we have very little precedent in regard to operations on the base of the skull. It does not seem to me that the pupil is as much dilated as when I began the operation, and this I take to be an indication that the pressure has been relieved.

CLINICAL MEMORANDA.

A TRUANT URETER.

By W. H. MAXSON, M.D.,
ST. HELENA, CAL.

I REPORT the following case as one of unusual interest, from the fact that such abnormalities are rarely met with. Three cases so far have been reported, two of which only came to operation. The first of the kind was published in the New York *Medical Journal*, December number, 1878, by Dr. W. H. Baker, and operated upon with success. A second case was reported in the *British Medical Journal* of December 6, 1884, by Dr. Thomas More Madden, of Dublin, Ireland. This case, however, did not come to operation. The third case was reported in *American Gynecological Transactions*, Vol. 15, 1890, by Dr. F. H. Davenport, of Boston. This case came to operation on February 11, 1890, and the first operation not being wholly satisfactory, the case was again operated upon March 11, 1890, with success. Three cases, including my own, have now been operated upon successfully, and it is to be hoped that others who may be suffering in the same manner may be induced to submit to the same treatment for relief.

Miss H., age 22, healthy, robust, never subject to any other than children's diseases; family history above suspicion. She had suffered from what she supposed was simply incontinence of urine, as she says, as long as she could remember, being obliged to wear a napkin continually night and day, and at the same time voiding at regular intervals urine, as she supposed naturally. Her condition gave her no end of trouble and inconvenience, and most of the time she felt that she was ostracized from society. She had consulted physicians, but all to no purpose, and had been obliged to bear this great misfortune —for such it was—all her life. Having heard of some cases that were benefited, she took new courage and applied to me for treatment January, 1893, in the hope that she might be relieved of the incontinence of urine. After an examination, it was found that she presented, as far as we could see, natural organs, and no indications of disease. Her urine was examined and found to be negative; and as there were no outside indications of the cause being other than simple incontinence, she was placed under treatment for the space of a month. The capacity of the bladder was measured and found normal; urine examined with negative results. Electricity, both faradic and galvanic, was used in appropriate strength, with a view to stimulating the sphincters to their proper tension. At the end of a month no perceptible change could be noticed, and the case looked discouraging.

Thinking that it was useless to continue treatment further in that line, we recommended a forcible dilatation of the uterus to relieve dysmenorrhea, with which she suffered expecting that to end our connection with the case. While under an anesthetic, however, we took occasion to make a more critical examination of the urethra, and then learned the cause of the incontinence. By the use of probes we could clearly demonstrate that the left ureter, instead of opening into the bladder, opened on the outside of the body, in common, however, with the external meatus of the urethra, but outside the external sphincter, as demonstrated by passing one probe into the bladder and another into the ureter; and by dilating the external meatus slightly we could distinguish the bridge separating the urethra and ureter, about one-fourth of an inch from the external surface. With the probe the left ureter could be traced up the vagina its entire length, and lying just beneath the mucous membrane.

After a careful consideration of the anatomical relations present, I recommended a radical operation for the relief of the patient, consisting of dissecting the ureter up to the walls of the vagina, and at a convenient place turning it into the bladder. I had never seen or heard of a case of the kind, and consequently asked counsel, taking

the case before four of the most distinguished surgeons of San Francisco—Drs. Lane, Plummer, Gibbons, and Cushing—who corroborated fully my diagnosis.

Thus encouraged, on the 26th of February, 1893, the young lady, after a careful preparation, was put under an anesthetic. Several surgeons assisting, I made the incision through the vaginal wall from the external meatus of the urethra up the vaginal wall about four inches over the line of the truant ureter, dissecting off the mucous membrane from the ureter that distance. I then passed a slender, long pair of dressing forceps, slightly curved, into the ureter, spreading the blades sufficiently to keep the ureter on the stretch, in order to prevent incising it while dissecting it out, which I succeeded in doing without any injury whatever to it. At the distance of about three and a half inches I reached a point where the base of the bladder came into close contact with the ureter. I then passed a curved sound through the urethra into the bladder, adjusting it in the base of the bladder at the point where the contact with the urethra was to be made, at which place I made a sufficiently large opening through the bladder. Finding that the ureter, dissected up, was much longer than necessary, I cut off about an inch and a half. I then put in a long suture in the end of the ureter, and looping the end of it over the sound, drew the sound back through the bladder and urethra, drawing with it the suture which was to pull the ureter through the opening in the bladder to the extent of an inch at least. I then stitched the ureter into the walls of the bladder, using catgut sutures, and the vaginal wall was closed over the former site of the ureter. I then passed into the bladder a gum elastic catheter and attached the ligature on the end of the ureter to the catheter, in order that the suture might hold the catheter *in situ* and that the catheter might make a continual mild strain on the ureter. The case was then put to bed, and made an uneventful recovery, with the exception of a stitch abscess, which discharged per vaginam, and a slight cystitis, caused by the irritation of the catheter. The catheter drained the bladder continually for two weeks. At the end of the second week the suture came away. The third week the urine was drawn every three hours, at the end of which time the patient was given free use of the bladder, with the instruction to void the urine quite often, as indeed she was inclined to do from a slight irritation. She was kept quiet for two weeks longer, after which time she has had normal use of the bladder, the urine passing normally.

It is now over two years since the operation. I have heard from the case occasionally, and have had the pleasure of making an examination twice. From all appearances I could not hesitate to pronounce the operation a success. It is needless to say that the patient was overjoyed as time proved her free from the distressing symptoms of incontinence.

The sixty-third annual session of the Medical Society of the State of Tennessee will be held at Chattanooga on April 14th, 15th, and 16th next. An interesting program, containing 38 papers, has been prepared.

TWO CASES OF ABSCESS IN THE MASTOID REGION, ASSOCIATED WITH DIABETES MELLITUS.

By R. A. URQUHART, M.D.,
of Baltimore, Md.

While the occurrence of boils and carbuncles on various parts of the body surface has long been recognized as a feature of diabetes mellitus, recent agitation of the question tends to show the mastoid process especially prone to be a seat of inflammatory change in this disease.

Just why this region proves to be a point of least resistance is difficult to explain. The cells and cavities of the middle ear being anatomically almost one and the same leaves no room for surprise at involvement of the cells after the establishment of otitis media—but why it should arise in the diabetic diathesis is by no means so evident.

The cases reported below are from a limited number treated in St. Agnes Hospital, Baltimore:

Case I.—Mrs. D., aged 57 years; admitted June 6, 1895, in fairly good condition; gives history of probable diabetes for the past six or seven years; passing about eighty ounces of urine daily, which showed 3 per cent. sugar; has inordinate appetite and thirst, and numbness and tingling of peripheral neuritis. Some days after admission several boils developed on various parts of the body surface and face, followed by complaints of pain in the region of the right ear. Careful examination showed only some slight redness of the drumhead, with a slightly reddened and swollen condition of the external auditory canal, most marked along the posterior wall.

The condition rapidly grew worse, and examination on the following day showed an auditory canal quite swollen and red, with marked congestion and bulging of the membrane, with some little exudation of pus from a previously existing small perforation in the lower posterior portion, with an exquisite tenderness to pressure over the anterior region of the process where there had developed no marked signs of inflammation. There were severe neuralgic pains over the right side of the face, with tinnitus and giddiness, the temperature at no time registering more than 101°.

The treatment consisted of constant hot-water application, with frequent irrigations with saturated solution of boric acid, drainage being effected by way of the middle chamber through the perforated membrane. The tenderness slowly left the region as the suppurative exudation decreased, and was followed by no serious involvement of the organ.

Case II.—Patient, Miss N., aged 65 years; admitted September 15th; poorly nourished; family history negative; urine passed in moderately large quantities, examination showing a small per cent. of sugar with phosphates largely increased, suggestive of the so-called phosphatic diabetes. The constant presence of sugar on repeated examination, however, showed a disordered nutrition, unquestionably of diabetic origin.

In this case, at no time has there been a tendency to furunculosis other than in two instances, in each of which the ear has been the region involved. In the first, the boil developed in the external auditory canal posteriorly; was of small moment and short duration, yielding readily to

early evacuation with subsequent irrigations, the membrane being in no manner involved, nor did the mastoid region appear affected.

In the second instance the mastoid region has been alone involved—the inflammatory process developing slowly but steadily—responding with slight pain only, at first, to deep pressure, with increasing swelling and redness, the upper anterior region being probably most noticeably tender. The tympanic membrane, at first unchanged, never showed more than mild congestion, while the external auditory canal in its posterior wall alone was affected—where there was no well marked inflammatory condition. Hearing at all times was acute; the temperature reached 101°. There were acute neuralgic pains radiating over the side of the face and head, but no other symptoms referable to other parts.

Deep incision over the affected area showed a diseased periosteum with unhealthy appearance of the bone below but no carious particles were noted; however, the length of time that a free discharge of pus took place suggests more than a periostitis. If this is a case of inflammation of the cells, apparently we have a primary involvement of the mastoid region in no manner traceable to a disordered condition of the tympanic cavity, for at no time has its involvement been of serious moment.

In neither case was the otitis media, if indeed this condition could have been present in the latter, traceable to inflammation of neighboring structures, pharynx, or Eustachian canal. That there does seem especial tendency to inflammatory changes in the mastoid region in the dyscrasia under discussion, there is unquestionable evidence, but as to the existing relationship we are as much in the dark as we are ignorant of the true nature of the diabetic diathesis.

NEW APPARATUS.

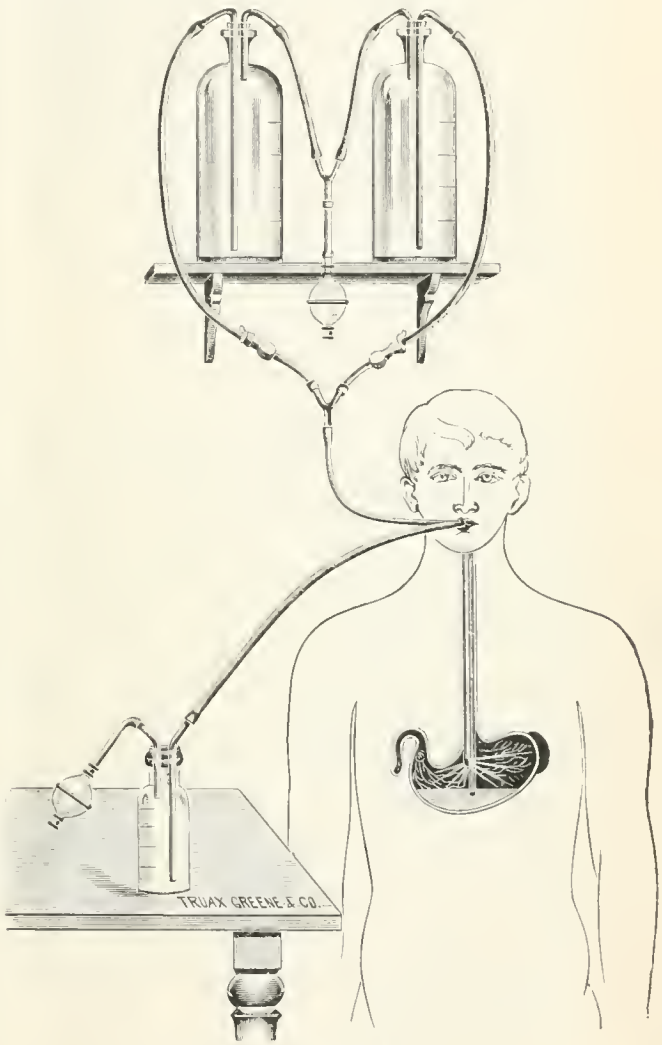
A PNEUMATIC FORCE IRRIGATOR FOR ALTERNATING HOT AND COLD WATER, AS USED WITH TURCK'S STOMACH NEEDLE-DOUCHE.

By FENTON B. TURCK, M.D.,
OF CHICAGO.

THIS consists of two large bottles, A and B, with closely fitted corks, pierced by two glass tubes, one of which reaches to the bottom inside of the bottle, like a siphon. To each of these glass tubes is attached a rubber tube of suitable length. Each rubber tube is supplied with a shut-off clasp, which may be easily opened and closed. A Y-shaped glass tube connects the two extremities of the rubber tubes. To the remaining, or stem, end of the Y-shaped glass tube, which is in connection with the long tube inside the bottle, is attached a rubber tube of any desired length. To this tube may be attached the double stomach-tube (needle-douche) or any point or tip used with the irrigator.

To the remaining, or stem, end of the second Y-shaped glass tube a rubber bulb (or any apparatus for the compression of air) is attached by means of a short rubber tube.

In order to fill the bottles, connect the long tube with the hot or cold water from the hydrant; in absence of hydrant use the water from an elevated vessel. After the bottles have been half filled, they are ready for use. In order to increase the force of the stream, all that is necessary is to pump in air, compressing it upon the body of water. The stimulation of the rapidly alternating hot and cold water, together with the impact of the small needle-



PNEUMATIC FORCE IRRIGATION.

like streams of very greatly increased force, acts as an intense vaso-motor and cellular stimulant. The cleansing power is also enhanced by the increased force of the stream; it is used also for a general irrigator. Besides cold and hot water, different solutions can be kept in bottles on hand ready for immediate use.

No. 1 THE PLAZA.

A RAPID METHOD OF FILTERING.

By SAMUEL H. FRIEND, M.D.,
MILWAUKEE, WIS.

SINK a tightly fitting pledget of absorbent cotton about one inch (2.5 ctm.) from mouth of test tube; fill the space

above with urine or fluid to be filtered. Place the opposite end of tube in running hot water, or water ranging between 120° and 150° F. (50 to 60 C.), or heat tube with a gas or alcohol flame. The result will be that the heated air in the tube will rise—following the law of the expansion of gases—which is manifested by the appearance of bubbles on top of the fluid layer. As soon as this is observed submerge the bottom or heated portion of the tube into water ranging between 40° and 70° F. (5° to 20° C.). The result is manifested immediately by the disappearance of the layer of fluid from the top, and its appearance in the bottom of the tube. This process may be continued indefinitely until the necessary quantity of urine or fluid is collected. The latter action is the result of suction, produced by the elasticity of the atmosphere and its pressure in refilling the partial vacuum.

This method is especially useful in the chemical examination of urine containing pus, and could also be used in making a rough estimate of solids held in suspension.

MEDICAL PROGRESS.

Epidemic Stomatitis.—At a meeting of the Laryngological Society of Berlin, SIEGEL (*Revue de Laryng., d'Otol., et de Rhinol.*, 1895, No. 24, p. 1184) stated that this disease presented itself generally in the form of an affection of the whole alimentary canal from the mouth to the anus; the descending portion of the large intestine is affected with particular frequency. The liver and kidneys often show alterations, and sometimes an exanthema occurs, in appearance somewhat between measles and scarlatina. In the mouth considerable inflammation and edematous swelling is observed, especially in the uvula, the faucial pillars, and the gums, and the latter present also scorbutiform lesions; the tongue is often much swollen; the formation of bullæ in the mouth, the pharynx, and the epiglottis is not rare, the gums are often retracted, the lingual mucosa in a state of desquamation.

In about thirty sections the author found a specific bacterium, and once a short bacillus showing a clear point in its center. He showed a preparation from the kidneys, in which a colony of specific micro-organisms was seen in a glomerulus.

E. MEYER presented two patients in whose feces SIEGEL found specific bacilli.

Phleginonous Lingual Amygdalitis (*lingual angina*, of DAVID CAIGIE; *basic glossitis*, of A. BROCA).—E. ESCAT, (*Revue de Laryng., d'Otol., et de Rhinol.*, 1896, No. 5, p. 129) reports the case of a shoemaker, 33 years old, who, being nearly cured of an angina, which had been cared for at home for eight days, experienced on the ninth day a relapse. The febrile symptoms—insomnia, cephalalgia, burning thirst—soon reappeared in a far greater degree than in the first attack. The patient complained of difficulty in deglutition, even of liquids, left otalgia, and the sensation of a foreign body in the throat. The mucosa of the buccal pharynx was the seat of a moderate diffuse catarrh; the faucial tonsils were slightly swollen, but otherwise negative, some edema of the subhyoidian region, and the inmobility of the tongue. By means of a special tongue-depressor and the laryngoscopic mirror, a very red, shining tumefaction was discovered at the base of the tongue, occupying the whole left half of the lingual tonsil, passing beyond the border of the epiglottis. It was considered advisable to make an incision, but before this could be done rupture took place during a violent spasm of the pharynx, and the throat was inundated by a flow of pus. The patient experienced a great relief, the deglutition of saliva became again easy, the pharyngeal pains less pronounced, and the voice clearer, and after three days the patient was completely cured.

THERAPEUTIC NOTES.

A Case of Intoxication with Bromoform.—VAN BOMMEL (*Deutsche medicin. Wochenschrift*, 1896, No. 3, p. 46) has reported the case of a child, ten months old, that took by inadvertence about a dram of bromoform. In a short time slight cyanosis had developed, the pupils were profoundly contracted and phenomena of respiratory and cardiac paralysis had made their appearance. The tongue presented a brownish discoloration, and the breath the characteristic odor. Artificial respiration was at once instituted, and the cutaneous surface was stimulated through hot bathing and cold douches to the head, the tongue meanwhile being pulled forward rhythmically. These measures were maintained for two hours, when an injection of ether was made. This was followed by trismus and spasms of the extremities. The injection was, however, repeated twice at intervals of half an hour, and gradually improvement began to set in. In the course of four hours respiration had become quieter and the cyanosis of the lips had given place to a red blush. In a day or two more, recovery was quite complete.

For Pulmonary Tuberculosis.—

℞	Potassii iodidi	. .	gr. xiv
	Iodi pur.	. . .	gr. xv
	Sodii chloridi	. . .	℥ jss.
	Aquæ destillat.	. .	Oij.—M.

S. Take three or four tablespoonfuls in a glass of milk from three to six times daily.

—RENZI, *Jour. de Méd. de Bordeaux*, No. 7.

For Tinea Favosa.

℞	Acidi carbolici		
	Balsami Peruvian.	aa	f ℥ jss.
	Petrolei		
	Glycerini . .	aa	f ℥ iij.—M.

S. Apply topically.

The scalp is washed with tincture of green soap, and the affected area is shaved, and generally painted daily with the foregoing mixture. If the hair grows rapidly the shaving should be repeated every two or three days.

—KHRÉNITCHEK, *Semaine médicale*, 1896, No. 8.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, MARCH 21, 1896.

EXCLUSION OF FOREIGNERS FROM THE PARIS MEDICAL SCHOOL.

By a recent decision of the faculty, foreign students are henceforth to be excluded from the Paris Medical School, and for this drastic measure the sole cause assigned is, "overcrowding." A considerable section of the French press has been loud in its outcry against this action of the faculty, and in deploring the sudden reversal of the broad and liberal policy which for centuries has characterized the management of the great educational institutions of the country. In France, however, it must be remembered that higher education, like the manufacture of matches, is a monopoly of the state, and that at the present juncture the action of the University may be in furtherance of the ultra-protectionist policy of the government. Another possible explanation is that the step has been taken with a view to filling once more the grass-grown courts of the provincial medical schools, which are still open to the foreigner, although unable (with two or three exceptions) to attract the native student. The spectacle presented by these almost deserted schools is deplorable. Their decay is chiefly attributable to the scheme of centralization, pursued in France by successive *régimes* for half a century, and which has made of Paris the only goal toward which ambitions tend. From time to time in these smaller schools a chair is suppressed for want of students (attendance at lectures being optional in French medical schools), and it is even alleged that in order to retain them the requirements of scholarship, nominally the same as in Paris, are indulgently modified.

That the school at the capital is overcrowded there can be no doubt. There are at present in Paris over four thousand students registered as attending the medical school, while the laboratory accommodation is inadequate for half that number. To relieve this congestion, an increase in the accommodation and teaching-staff is dismissed from consideration on the score of expense; adding to the requirements for matriculation, it is said, can be resorted to no more; while the suggestion to restrict provincial students to provincial schools for the first two or three years of the course has so far met with little favor. That the exclusion of foreigners will still leave the Paris school overcrowded is admitted by all, an admission which lends some weight to the theory that the blow is aimed at the practitioner from abroad rather than at the student. Many foreign graduates of the Paris school remain permanently there to practice, and in these days of keen competition the native practitioner cannot but regard their presence as an intrusion. To-day the cry is not "the more the merrier," but "*la France aux Français.*"

Emboldened by the recent action of the authorities, the Parisian students have already entered the breach, and demand that the French medical degree should in future confer upon the foreigners no privilege to exercise his profession on French soil. To this it may come, but probably more liberal counsel will prevail.

In conclusion a word may not be amiss as to the principal reasons for the present overcrowding of the Paris school. They are twofold:

Firstly, it is due to the remission in the term of military service accorded to those engaged in the study or practice of the liberal professions.

Secondly, to the tendency of the age, which leads the young man to abandon the country and

smaller towns for the great city, and in this special instance to seek to profit by the advantages of the largest medical school in the world, in the fond belief that his assimilative powers must needs be stimulated in proportion to the amount of pabulum set before him.

THE PRESENCE IN THE NORMAL THYROID GLAND OF A SUBSTANCE CONTAINING A RELATIVELY LARGE QUANTITY OF IODINE.

THE demonstration, by the distinguished Freiburg chemist Baumann,[1] of the presence of an organic iodine compound in the normal thyroid gland must be regarded as one of the most important of the recent contributions in the field of chemistry. But quite apart from the interest which belongs to it from a purely chemical standpoint, a much wider significance attaches to the discovery from its therapeutic aspects; for we are now at least promised a solid basis from which may be deduced an explanation of many well-known clinical facts which have been developed not only from the treatment of disease of the thyroid gland with thyroid extract, but from organotherapy in general.

Almost simultaneously with the earlier reports dealing with the benefits to be derived in certain diseases from the administration of the thyroid extract there developed in chemical circles an unprecedented activity in investigating the constituents of the thyroid gland; and the unabated interest which has since prevailed is evidenced by the large number of articles dealing with the subject that have appeared up to the present time. None of these, however, offers a satisfactory explanation of the beneficial influence which has undoubtedly followed this form of medication. The incomplete publications of Notkin, in which it was asserted that two substances—a protein and a ferment—were responsible for the virtues of the gland, have been looked upon, curiously enough, with favor by the French, although physiological chemists in Germany and America have not been inclined to consider them seriously. The crystalline nitrogenous derivative described by S. Fraenkel, although of chemical interest, is insufficient to supply a solution of the problem in question.

The idea that the element iodine might stand in some very definite relation to the metabolism of the thyroid gland is by no means new. Even as early as 1850 Chatin, who believed that iodine was present in the air, in water, in all plants, in fermented drinks, in milk, in eggs, and in the soil, suggested that its presence was essential to the welfare of the organism, and that cretinism and goitre occurred only in those regions in which iodine was entirely absent from the drinking-water. Others who studied the constitution of the air and of water denied, however, the presence of iodine in them, and Chatin's theory was at first discredited and afterward forgotten.

Kocher, the distinguished surgeon at Zurich, only a short time ago, relying upon the fact that the efficacy of iodine in the treatment of diseases of the thyroid gland compared favorably with that of the thyroid extract, suggested that the normal thyroid gland be examined thoroughly, in order to see if iodine existed in it. Tschirsch incinerated the gland, but failed to find iodine, and chemists, relying upon his results, naturally took it for granted that this element was absent. This negative result was perhaps not surprising, considering the small amount of iodine present in the crude gland, though Baumann has since detected it in the ash from one gram of the dried gland.

Roos, in a report of an investigation preceding Baumann's publication, in which he showed that the thyroid gland bore a distinct relation to the phosphorus metabolism of the body, mentioned some experiments which may really be looked upon as the forerunners of Baumann's brilliant discovery. It had for some time been known that digestion, moderate heat, and certain antiseptics did not destroy the active substances of the thyroid gland, and Roos proved, in addition, that prolonged boiling in 5 to 10 per cent. solutions of the mineral acids apparently did them no injury. It was his opinion that a portion of the active substance, though not all, was soluble in water.

Baumann, after boiling the glands in 10 per cent. sulphuric acid, and separating the fine flocculent precipitate after cooling, purified it by further

[1] *Ztsch. f. physiol. Chemie*, Bd. XXI, Heft 4.

treatment with alcohol and 1 per cent. caustic soda, and repeated precipitation with dilute sulphuric acid. He obtained a brown, amorphous substance, in weight from .2 to .5 per cent. of that of the fresh glands, and which, arguing from the results of Roos' experiments made upon men and dogs, he believed to represent approximately all the active principle of the gland. The substance is almost insoluble in water, very slightly soluble in alcohol, but easily dissolved in dilute alkalies, from which it is precipitated by the addition of acid. It yields no reactions for albumin, but contains always small amounts of phosphoric acid in organic combination. The most interesting fact concerning it is that it contains iodine, and that too in a relatively high percentage. Baumann reduced the substance to ash with caustic soda and nitrate of potash, dissolved the residue in water, added nitric acid, and shook with chloroform. A distinct violet color resulted, showing the presence of iodine. The work was done with pure chemicals, and the only possible source of the iodine was the substance obtained from the thyroid gland. To this substance Baumann has therefore given the name "thyrojodin." In his early experiments he thought that the preparation contained only about 3 per cent. of iodine, but after further purification he obtained a substance yielding as much as 9.3 per cent. of iodine; and he believes that when obtained absolutely pure it will show even a larger percentage of the element.

Baumann has been particularly fortunate in having the assistance of the large chemical factory of Bayer & Co., at Elberfeld, who prepared large quantities of the thyrojodin for his further experiments, more than 1000 sheep's thyroids being utilized for this purpose. At Freiburg, too, there is always available a large number of patients, drawn from the Black Forest and the Vosges, suffering from diseases of the thyroid gland, so that, with the active co-operation of Roos, Baumann was able to test the effect of the new substance clinically in human beings, a fact of much importance, since we now know that the thyroid extract is much more efficacious for human beings than for dogs and other experimental animals.

Thyrojodin is present in the thyroid of the pig, though in smaller quantities than in that of the sheep. It is probably present in the human thyroid; so far, Baumann has had the opportunity of examining only one human gland, a hardened pathological specimen, and this contained a small amount of iodine. If, however, as Baumann believes, the thyrojodin represents the whole of the active principle in the gland, it is difficult to see why it is that glycerine-and-water extracts of the thyreoid gland appear to be therapeutically perfectly efficacious, inasmuch as this substance is almost entirely insoluble in water. This apparent contradiction Baumann promises to explain in a subsequent publication.

That this discovery will throw new light upon the functions of the thyroid gland and upon the nature of the benefits of thyroidtherapy there can be but little doubt. Baumann suggests that the surprisingly rapid amelioration of symptoms in goitre which follows the exhibition of the thyroid gland itself, as compared with the results from the iodine treatment, may be due to the fact that whereas by the administration of simple iodine the manufacture of a certain substance is made possible and facilitated, by the employment of the thyroid gland or its extract, this same substance is brought into the organism ready-made and in a condition suitable for immediate metabolic use.

One of the most interesting features of the investigation is the demonstration of the marked elective affinity exhibited by a definite organ of the body for the element iodine. It is very remarkable, indeed, that a substance existing, as it must, in extremely small quantities in the blood and tissue fluids of the body can be accumulated in one organ and rendered thereby capable of elaborating in relatively large amounts a functionally active compound such as thyrojodin represents. It is quite possible, should Baumann's results be confirmed, that we have here to deal with a principle of wider application as regards the functions of organs, and the recognition of which would go far to throw light upon the whole subject of organotherapy.

The interesting physiological law formulated by Treviranus has already had clinical confirmation, at least for a number of organs. As a result of such work as that of Baumann, there

would seem to be some prospect of its establishment upon a definite chemical basis.

GENITO-URINARY AND VENEREAL DISEASES AND SYPHILOLOGY.

A CRITICAL RÉSUMÉ OF RECENT ADVANCE: SYPHILIS ACQUIRED IN ADVANCED LIFE.

Though in America and France it is generally admitted that syphilis contracted at an advanced age, as a rule, runs a rather severe course, and is frequently the cause of cerebral and cerebro-spinal lesions of varying gravity, it must be remembered that a number of German observers have reached a contrary conclusion. Thus, so sagacious an observer as the late Prof. Sigmund failed to find syphilis when developed in aged persons any more severe in its course and manifestations, or to be more frequently complicated with brain symptoms, than the same disease in the earlier periods of life. Sigmund's conclusions were based on the study of 118 cases of men and women in hospital and private practice, observed during a period of thirty years. Coming from such an eminent authority, this statement seems very striking; but when it is learned that the average advanced age in women was only 45 years and in men 55 years, our surprise is much diminished. In very many patients at this age the health is strong and vigorous, and senile decay has not yet set in. In striking contrast to Sigmund's views are those of Fournier, Quinquand and Ullmann, Rénault, Dulac and Regoby. In general it may be said that these observers held that the advanced age should be considered as periods between 50 and 70 years of life. In these ages they saw severe forms of syphilis, and noted the frequent occurrence of cerebro-spinal symptoms. Certainly this greater latitude for observation will yield far more trustworthy clinical results than a study of syphilis in middle-aged persons will. When it is remembered that syphilis expends its morbid action largely and extensively upon the blood-vessels, the fact strikes one that in old persons the severity of the attack is very much influenced by the condition of the vascular system. Upon the integrity of the patient's vessels, therefore, hinges in a large degree the greater or less severity of the syphilis. In old persons arterio-sclerosis is common, and may involve more or less of the circulatory apparatus. Instances of this involvement combined with syphilis are not at all uncommon. Besides vessel-changes, visceral lesions, general debility, an unstable condition of the tissues, and the systemic morbid effects produced by vicious habits and indulgences are undoubtedly factors of gravity in syphilis of advanced life. These reflections bring strikingly to the mind the futility of generalizations in the study of the question now under consideration. The truth is that the subject of syphilis in the aged should be yet gone over again by individualizing in each case, and on a large scale, before systematic conclusions can be drawn. The force of this contention has been well brought out in a discussion before the Berlin Dermatological Society upon the relative frequency of nervous affections in old persons attacked by recent syphilis (*Berlin. klin. Wochenschrf.*, No. 25, p. 551, 1895). In eleven cases between the ages of 61 and 64 years under his care, Born observed neither benignity nor malignity in the course of the disease, and in none was the nervous system attacked. In 600 cases of malignant syphilis Lewin only observed about 10 in which cerebral symptoms were present. Lewin's statistics are almost rendered nugatory for the reason that he included cases which had only passed their fortieth year. In this discussion Renvers hit the keynote of the question when he remarked that the evolution and course of the disease were especially influenced by the condition of the vascular system. A pre-existent encephalic arterio-sclerosis, according to the anatomo-pathological studies of this observer, was largely the determining cause of brain syphilis. Cases also are certainly seen in which an hereditary unstable condition of the nervous system has seemed to be the underlying cause of its involvement by syphilis.

Blaschko, in the same discussion, stated that he had been impressed with the mildness of syphilis in old persons, and had come to think that it was due to the great vitality enjoyed by voluptuaries who, when quite old, were capable of putting themselves in the way of contracting syphilis. Mendel, whose paper opened the foregoing discussion, thought that arterio-sclerosis was the underlying cause of the malignity of syphilis in the aged. A review of my own clinical

experience has convinced me that in many elderly persons of vigorous physique and good habits syphilis runs a comparatively mild course: in less vigorous persons it is more severe; but that in poorly nourished, weakly, and under-weight individuals, in nervous, excitable, neuropathic, and over-studious (brain-workers from all causes), it is often severe and even disastrous in its effects. Further, I have observed the malignant combination of arterio-sclerosis and syphilis and the grave effects of antecedent visceral diseases. Much further light can be thrown on this important and yet unsettled subject by the publication of well-observed cases.

ROBERT W. TAYLOR, M.D.

ECHOES AND NEWS.

IN compliance with a request from Secretary Chancellor, of the Association of Military Surgeons of the United States, Gov. Turney, of Tennessee, has appointed Brig.-Gen. T. C. Murrell, of Jackson, Surgeon-General; Col. E. Mills Willet, of Memphis, surgeon First Brigade, and Maj. J. R. Buist, of Nashville, surgeon First Regiment, as delegates to the sixth annual meeting of the association, which convenes in Philadelphia on May 12.

ARRANGEMENTS are being made by the Section of Neurology and Medical Jurisprudence of the American Medical Association, at their Atlanta meeting, in May, to have the medico-legal possibilities and bearings of the Röntgen rays upon medicine and surgery presented in an elaborately illustrated lecture. Several newly discovered facts will be stated, and unusual attention will be devoted to this topic.

THE *Lancet* announces that the late Lady Gregory, alias Mrs. Sterling, the celebrated English actress, has divided by will a large sum of money among several of the great London hospitals. In commenting on this it says that the theatrical profession have of late years been especially kind in the interest which they have taken in medical charities, and have shown it in a practical manner by often giving their services and lending their theatres for aid of hospital funds. It is needless to say that the theatrical profession of America is equally generous and beneficent.

SOME very interesting facts were recently brought out in a report to the Reichstag concerning the decline of disease in the German Army. From the report it appears that since 1868, when the number of cases of sickness was 1496 per 1000, there has been a steady reduction to 867 per 1000 in 1894, or 42 per cent., and the death-rate has gone down from 6.9 per 1000 to 2.4 per 1000, a reduction of 65 per cent., which means a saving of 2200 men each year. This remarkable improvement is due to modern improved hygiene and to the strict enforcement of vaccination during the past thirty years. Smallpox is now exceedingly rare, and has caused only two deaths since 1873. History demonstrates that the most devastating army epidemic is smallpox. In the French Army, during the Franco-Prussian war, there were 23,400 deaths from this disease, while in the German Army there were only 300 deaths. The campaign of 1870-71 reversed the time-honored rule that disease kills more than the enemy; 26,000 German soldiers fell in battle and 14,000 by disease.

THE statement is made that Kaiser William, of Germany, has had his left arm skiagraphed by the new process. This arm, as every one knows, is quite useless, and the skiagraph revealed the nature of the malformation. The result has been submitted to eminent surgeons, and it is stated that they believe a simple operation may give the Emperor partial, if not complete, use of his left hand and arm.

IT is reported in the daily press that Dr. Chantemesse, of Paris, has discovered an anti-typhoid serum, with which he has experimented on three patients. After the first injection they passed rapidly through the ordinary stages of the disease and became convalescent.

IN a recent conference between the New York State and New York City boards of health, a resolution was adopted asking that $300,000 be appropriated as a fund to be used in a systematic combat against tuberculosis.

AN appropriation recently made for a new public bath in New York city is certainly a charitable expenditure of the public funds along lines that must commend themselves to all. No other system of sanitation, either physical or moral, can be compared with the bath.

DR. HENRY P. WALCOTT, in a lecture delivered last week in Huntington Hall, Boston, Mass., upon "State Medicine in the Nineteenth Century," made use of the following statistics: Out of every 100 infants there die in the first year in Bavaria 30.6 per cent.; in Holland, 20.3; in France, 16.6; in Massachusetts, 16.3; in London, 16; and in Boston, 26.

BEFORE the Judiciary Committee of the Massachusetts Legislature, during its investigation relating to vivisection last week, Dr. W. T. Porter gave an interesting and detailed statement regarding the work of the Physiological Laboratory at Harvard from the first of last October to the present time. The lectures and demonstrations had been 128 in number, and the experiments on living animals 28, including 9 on dogs, 8 on rabbits, 5 on pigeons, and 6 on frogs. The dogs, rabbits, and pigeons were anesthetized throughout the operation. The dogs and rabbits were killed before consciousness was regained. In none of the experiments did the animals suffer.

THE *British Med. Journal*, Feb. 29, '96, announces the hope that the British government will shortly abolish all that remains of quarantine law in that country. It bases this expectation on the statement that plague and yellow fever are the only two diseases to which quarantine is now applicable in England; that the former has

been unknown in recent times in western Europe, that the danger is therefore very remote, and even should it appear it could be dealt with successfully by local government boards; while it had been demonstrated that yellow fever could be suppressed by the same instrumentality. Cholera, the one epidemic of the first gravity that has invaded the country in modern times, had been combatted successfully without invoking quarantine enforcement.

THE Dead-letter Office, at Washington, is said to still have in its possession a human skull, sent to the late Prof. S. D. Gross, of Philadelphia, eight years ago, and refused by him because there was $3.19 due in postage, the package having been sealed against inspection.

A SINGULAR society has been formed, taking the name of The Cornell Brain Association, which has for its object the post-mortem study of the effects on the human brain of education and good morals. At least we learn from the daily press that Dr. Wilder, of this association, has made another appeal to educated and moral persons to bequeath their brains to the institution for scientific study. In response to this letter the society has already received eight brains, and has the promise of twenty-five others, which are as yet being used by their owners. These latter include the brains of Thomas K. Beecher, of Elmira, and Mrs. McGee, daughter of the astronomer Simon Newcomb. Apparently no brains of immoral or uneducated persons can be used by the association, though it would seem that a few of the latter class might prove of advantage for purposes of comparative study.—*Boston Med. and Surg. Journal.*

DR. EDWIN A. BOWERMAN passed a recent civil-service examination at Albany, in which he attained the highest average, 95.3. He has been notified of his selection to fill the first vacancy as junior assistant physician in the New York State hospitals for the insane. Dr. Bowerman graduated with first honors from the College of Physicians and Surgeons of Baltimore in 1895.

INFECTIOUS bacteria are reported to have been discovered in Russian grain in great abundance, and with such tenacity of life that they withstand the heat of an oven. Germany is disposed to consider this sufficient ground for prohibiting the importation of Russian cereals, but a more careful investigation is now in progress.

A BILL has been presented to the Maryland Legislature providing for a board of dental examiners, from which all dentists entering the practice of their profession in that State shall be required to obtain a license.

THE College of Physicians and Surgeons, of Chicago, has purchased the post-graduate school and hospital adjoining the college, at Harrison and Honore streets, for $50,000. This will afford its students opportunities for practical ward work in hospitals not before permitted.

AT various places throughout the south and west smallpox is said to be present, but New Orleans is suffering from a real epidemic. Cases to the number of about twenty are discovered daily, and the pest-house was reported to contain already over 150 patients.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, March 3, 1896.

EDWARD D. FISHER, M.D., PRESIDENT.

A STUDY OF SPORADIC CRETINISM.

DR. WILLIAM B. NOYES read a paper with this title. He said that on September 1, 1895, he saw a child, 2 years old, who was not more advanced than a child of 6 months. The abdomen was protuberant, the nose short and retroussé, the tongue swollen and protruding, and the saliva dribbling from the mouth. There were two swellings on the neck, just in front of the sterno-mastoid muscles. The child appeared to be idiotic. Its length was 24 inches. The epiphyses of the long bones were somewhat swollen. There was no rachitic rosary or any other rachitic symptom. The mother stated that this was her first child, and that it had been born after a normal labor. Both parents were young and healthy. The child reached a weight of fourteen pounds after two months, and then did not gain for more than a year. The chief complaint had been constipation and weakness. There was no family history bearing on the condition. On September 15th the child was ordered a daily dose of one-fourth of a Burroughs & Welcome five-grain tablet of thyroid extract. By mistake a daily dose of five grains was given at first, with the result that the circumference of the neck was reduced two inches, and the child had begun to perspire. The temperature rose to 102°, and there were prostration and sleeplessness. At the end of a week the entire body had desquamated, leaving a clear, white, waxy skin. On November 24th, after having taken one grain daily, the amount of improvement was wonderful. By February the child had grown eight inches, and its weight had increased three or four pounds.

In considering the effect of heredity, the speaker said it might be manifested in three ways, viz.: (1) In a congenital local defect; (2) in a defect of growth; and (3) in a defect in the general vitality. One or more of these defects might exist in the same individual. Many epileptics, inebriates, and insane persons showed this physical and psychical taint. There was a very significant hereditary element in cretinism. Some European observers had believed the cretins to be the descendants of a degenerate race, but this could hardly be credited. Recent epidemics of cretinism had shown that heredity was the chief cause of sporadic cretinism. Only those whose parents had goitre seemed to develop cretinism. Those with goitres were not cretins, but cretinism appeared in the next generation. Endemic cretinism was not so much hereditary as a hereditary local deficiency. All over Europe, and particularly in the mountains, statistics showed that deaf-mutism was much more prevalent than in the lower-lying regions. This was probably due to the evils of consanguinity, poverty, and unsanitary surroundings. There were certain cretins who did not present all the typical indications of cretinism. In various parts of the world were to be seen cases presenting the general features common to endemic cretinism, which were known as sporadic cretin-

ism. In early childhood these cases had been frequently confused with the more common forms of idiocy. When the thyroid gland is removed by operation, or when it atrophies from disease, certain changes are observed. First, there is a general disturbance in the nutrition and the development of myxedema—a general increase in the bulk of the body, a deposit of infiltration of mucin. The latest examinations by Halburton showed a practically normal percentage of mucin in the skin, and a very slight increase in the subcutaneous tissues. There was an excess of "basement substance," or young connective tissue holding mucin. In the later stages of myxedema the subcutaneous connective tissues became permeated by white fibres and fat-cells—the atrophic stage. The blood is altered, and there is some evidence of toxicity in the blood. Acute or operative cases in animals showed certain nervous symptoms, such as fibrillary tremors or convulsions. In the young infant the myxedematous process tended to produce: (1) a condition of idiocy; (2) edema and swelling of the subcutaneous tissues would be more marked than in the adult, because the tissues were softer; and (3) a general change occurred in the bony framework of the body—*e.g.*, a peculiar shape of the skull, lordosis of the spinal column, and a general dwarfed appearance. In the long bones of cretins the almost geometrical relation of the rows of ossifying cells found in the normal condition gives place to irregular cells, and growth in the longitudinal direction is stopped. At some of the autopsies, fibrous connective tissues had been found around the epiphyses. Rachitis was a very different process from that seen in cretinism; the cartilage cells proliferated rapidly and very irregularly, and ossification was irregular and failed entirely. Hofmeister removed the thyroids from a number of rabbits. They developed only very slight symptoms, but those operated upon were soon noticed to be smaller than the control animals, their bellies were more protruding, and their skulls broader. After from two to seven months they were killed. Few changes were found in the soft parts; there was no myxedema and no special changes in the viscera. There was a decided retardation in the development of bone in the thyroidectomized animals; the skull and jaw were the least affected. There was a difference in growth of one-third in the tibiæ of the thyroidectomized rabbits and the control animals. The case of a boy had been reported, from whom the thyroid had been removed when he was 10 years of age, and who had not grown at all during the eighteen months that he survived the operation.

The etiology of sporadic cretinism was even more obscure than that of the epidemic form. Of the reported cases, several seemed to have been the first children of quite young parents; one or both of the parents were apt to be neurotic; there was often a marked alcoholic taint; there were other children in the family with some other nervous disease or possessing some stigma; and in Edinburgh the prevalence of cretinism was apparently due to squalor and poor food and air.

In conclusion, the speaker emphasized the following points: (1) That the symptoms of cretinism were to be explained as a result of a myxedematous process in the undeveloped tissues of the infant; (2) the scientific application of the principles of heredity, by such methods as had been used in deaf-mutism, idiocy, and other nervous diseases, would yield similar results in cretinism.

Dr. W. M. Leszynsky said that he had had under his care a cretin, 25 years of age. It was a case of sporadic myxedematous cretinism, and the mental development was so defective that the man acted like a child of 6 years. There was an absence of thyroid, and there was some myxedema. The man was treated in the hospital for a number of weeks by the thyroid extract, with but very little benefit.

Dr. L. Seigleitz said that Ewald in his most recent study of myxedema and cretinism had not been able to accept the thyroid theory alone as the cause of cretinism. He adduced a number of good reasons for believing that this was not the only etiological factor. He thought the excellent result in the case just reported was due to the fact that the child came under treatment at a very early age. It was hardly to be expected that the older cases would respond quickly to the treatment. An interesting point about the development of cretinism was that very many of these children appeared to be perfectly normal until about the time of weaning. This could be explained by the fact that animals who fed on vegetables and milk did not develop myxedema nearly as rapidly as animals fed on flesh.

The President said that it was now pretty well established that sporadic cretinism occurred chiefly among the poor and amid unsanitary surroundings. The photograph of Dr. Lezaynsky's patient closely resembled one of a family of three cretins living in this city. They were typical cretins, and they had given absolutely negative results from the thyroid treatment. He had seen a considerable increase in the intelligence even in patients of 40 years. There could be no question about the excellency of the results from the thyroid treatment if the child came under observation at the age of 2 or 3 years. Goitre, he said, was widely distributed through certain portions of Canada, yet in persons so afflicted he had never observed any tendency to cretinism or exophthalmic goitre.

Dr. Noyes said that he had desired in his paper to direct attention to the great importance of grasping all forms of stigmata. He recalled an article in which had been stated that among the French-Canadians sporadic cretinism and goitre were common.

A CONTRIBUTION TO THE STUDY OF ACUTE ASCENDING (LANDRY'S) PARALYSIS, WITH EXHIBITION OF SPECIMENS STAINED BY THE NISSL METHOD.

Dr. Pearce Bailey said that the labor of preparing this paper had been equally shared by Dr. James Ewing and himself. Although it was nearly forty years since Landry described the disease which bore his name, there were to-day conflicting views regarding its pathology. The symptoms of the original case had been acute paralysis ascending from the legs and arms, unaccompanied by marked loss of sensation, or by involvement of the sphincters. The intellectual faculties remained unimpaired.

After death no lesions were found in the nervous system to explain these symptoms, and careful microscopical examination of the spinal cord by several observers was absolutely negative. The nerves were not examined.

The authors of this paper said that they had recently seen a case of acute ascending paralysis with extensive lesion in the spinal cord. The patient, a female, 36 years of age, was admitted to the Roosevelt Hospital, November 25, 1895, to the service of Dr. Francis Delafield. The family history was negative. The patient had previously enjoyed good health. On November 19th the disease began with vomiting, which continued until the third day, when she went to bed exhausted. She then began to have occasional attacks of vertigo, and dimness of vision. On November 23d she suddenly lost the power of both legs, and the next day there was paralysis of both arms. Sensation was undisturbed. The temperature was 101.4 at the time of her admission, and the urine examination was negative except for finding a few hyaline casts. The only important point in her personal history was that she had been a rather excessive beer-drinker. There was moderate ptosis on the left side; tactile sensibility was normal; there was no pain or tenderness in arms and legs; the bladder control was normal; the knee-jerks were lost; there was diminished response of the paralyzed muscles to the faradic current. On the 27th she complained of headache and dyspnea; on the 29th the urine contained a trace of albumin; and on the 30th, after a severe attack of pulmonary edema, she died. At the autopsy, which was made twenty hours after death, the serous cavities were normal; the lungs were moderately congested; the bronchial lymph-nodes were normal. The muscle of the heart was rather pale, and there were a few atheromatous patches in the aorta. The liver was reduced in size, and the general outline of the lobules was indistinct. The spleen was large and rather firm; its trabeculæ were faintly visible, and the Malpighian bodies imperceptible. The kidneys gave evidence of acute degeneration. Examination of the brain showed considerable distention of the veins and sinuses; there were no thrombi. Sections disclosed a large but not distinctly abnormal blood content. The consistence of the spinal cord was normal: the white matter appeared normal; the gray matter was plainly outlined and very slightly congested. The anatomical diagnosis was congestion and edema of the lungs, acute degeneration of the kidneys, acute hyperplastic splenitis. In the microscopical examination the Nissl stain furnished the most satisfactory result of the many stains tried. It is excellent for studying the changes in the ganglion cells. The vessels of the cauda equina were filled with blood; the axis cylinders of the nerve fibres appeared to be normal. The nerve fibres in the nerve roots appeared to be normal; in some nerve roots there was a slight perivascular infiltration of small round cells. Examination of the spinal cord showed the gray matter to be extensively affected throughout the entire length of the cord; there was intense congestion of all the blood-vessels, especially of the anterior branches of the spinal artery. Nearly all the vessels showed pronounced perivascular infiltration of small round cells. There was a diffused cellular infiltration of the gray matter, at times extending slightly into the white matter. The central canal appeared not to be especially affected. There was a more or less complete absence of chromophyllic masses in the cells. In some cells the cytoplasm was entirely bereft of chromophyllic bodies, being replaced by fine bluish particles. In the areas where the exudative inflammation was most pronounced, many shrunken cell bodies without visible cell nuclei were recognized with difficulty. In the white matter, where the inflammatory process extended into it from the gray matter, there was moderate perivascular infiltration. In the cervical region of the cord the lesions were most pronounced, while in the sacral region they were the least, many ganglion cells in the anterior horns remaining fairly well preserved. The lesions in the medulla and pons were chiefly marked in the gray matter, and were similar to those described in the cord. The nuclei of the cranial nerves were all more or less damaged, but chiefly in the sixth or seventh nerves. The basal ganglia showed the perivascular lesion and numerous small foci of cellular infiltration. The tempero-sphenoidal lobes were normal. Throughout the cerebellar cortex were found lesions similar to those found in the spinal cord. In the case just reported the clinical symptoms were attributable to most extensive lesions affecting chiefly the gray matter of the spinal cord. The fact that the lesions were but slight in the sacral region explained the persistence of sphincter control.

There were many recorded cases, the speaker said, in which an ascending paralysis, unaccompanied by sensory symptoms, soon involved the bulbar nuclei. An ascending paralysis, pursuing a rapidly fatal course without pronounced sensory symptoms, was a distinct clinical entity. These had always been considered the essential symptoms of Landry's paralysis.

To this paper was appended a table of all the carefully recorded cases, except those published in the Russian and Scandinavian languages and a few old monographs. Several cases had been included which had been hitherto described as acute poliomyelitis anterior.

Fatal acute ascending paralysis might be divided into the following groups: (1) Cases in which no histological changes could be demonstrated in the nervous system; (2) those in which there was an acute exudative inflammation of the cord, medulla, and sometimes of the brain; (3) acute inflammation of the peripheral nerves; (4) acute inflammation, both of the central and peripheral nervous systems. In sixteen of the collected cases there were lesions limited to the cerebro-spinal axis. A consideration of the etiology, symptoms, and pathology of the disease points to the action of a toxic agent as the direct cause of the lesions. The lesions indicated an acute exudative inflammation, such as is usually found in cases having a bacterial origin. The authors had found it impossible to differentiate these various groups by their clinical manifestations. Their conclusions were: (1) That acute ascending paralysis was probably a toxemia in which the poisonous agent affected chiefly the nervous system; (2) that its most common seat was in the spinal cord or medulla, though it might be present in the cortex

and nerve roots; (3) that the lesions in other parts of the cerebro-spinal axis were of a similar nature; and (4) that when the lesion affected the peripheral nerves there was an increase of neuroglia cells.

Dr. Beverley Robinson said that he had seen only one case of this disease, and that one had been reported some time ago to the Practitioner's Society. In the clinical history of that case there was no evidence of any toxemia. The pathologist who had charge of the case failed to examine the nervous system by the improved methods detailed in the paper, or by bacteriological methods, but he reported that there was little or no evidence of lesion in the spinal cord, although there were some pathological changes in the nerves themselves. The case had run a rapidly clinical course, and the patient had died of edema of the lungs.

Dr. C. L. Dana said that as he recalled Dr. Robinson's case the clinical history was clearly one of Landry's paralysis, but there were no careful microscopical or bacteriological examinations reported; hence, though the case was apparently some form of toxic neuritis, there was no proof that the nerve cells were not primarily implicated. Three years ago when discussing the subject with Mr. Victor Horsley the opinion had been expressed that paralytic rabies might be classified clinically as Landry's paralysis, and that probably some of these cases were really examples of rabies. The sections at present under the microscope showed some cellular changes, yet the general pathological picture was that of a very marked vascular trouble—an infection or toxemia. He would say most certainly that the primary changes were vascular, and those in the ganglion cells were secondary. His experience with the Nissl stain had led him to place much less confidence in its revelations than did many others. In almost any brain one could find all sorts of changes in the chromophyllic substance, and the method of preparing the staining and sections made it seem to him almost impossible that there should not be considerable differences in the way in which the various cells took up the coloring substance. The cortex cells in this specimen seemed nearly normal, although there was here evidence of this same vascular irritation. He thought that if the nerves had been examined it would have been found that they had been damaged even more than the nervous system. He recalled a case resembling Landry's paralysis, although running a slower course, in which there had been evidence of nervous and vascular irritation; the history of the case showed it to be rapidly fatal alcoholic neuritis.

Dr. B. Sachs said that Landry's paralysis had been buffeted about a great deal by various writers. Fortunately the day had passed when diseases were classified entirely on mere topographical lines. That there was a toxic agent causing Landry's paralysis he thought there could be no doubt, and hence it was to be particularly regretted that a bacteriological examination had been omitted in this and many other cases. Since the bacilli of influenza had been found in cases of spinal-cord affection following that disease, it became incumbent on every careful observer to make a bacteriological examination. He also felt that we should be very careful in making inferences regarding slight changes in the structure of the cells in specimens stained by Nissl's method. In the case reported in the paper, one of the chief symptoms had been absence of sensory disturbance quite early in the disease. If this one clinical feature must be accepted as essential we could not suppose that the changes which had been described were those chiefly responsible for Landry's paralysis. It was more than probable that the changes occurred not only in the brain, but in the spinal-cord and the peripheral nerves.

Dr. George Jacoby said that if we accepted Landry's definition of the paralysis we could only make a clinical diagnosis, for Landry claimed that there must be a lack of anatomical evidence. He had been struck by the fact that in the case described in the paper the patient was a beer-drinker, and that the symptoms had developed quite rapidly. This had been noted in quite a number of cases. The lesion might be localized in the cells of the spinal cord or in the cortex. The report presented seemed to indicate that in the future we would probably find pathological changes in the cell body analogous to those which had been thus far found in the peripheral nerves. It would seem that we were dealing with a chronic alcoholic intoxication of the central nervous system.

Dr. Landon Carter Gray said he thought that the paper just presented was an extremely valuable contribution to the subject of Landry's paralysis. He could recall a number of cases of this disease which could be divided into several groups. Some of these had proved rapidly fatal; some had run a slower course; some had improved and then relapsed. Those which had recovered had subsequently had atrophy of the muscles, and had presented a condition similar to that of poliomyelitis. He had also seen cases of alcoholic neuritis presenting several types—some few had died, some had had obstinate vomiting for days and weeks, some had passed into a miserable condition of invalidism. He could not recall that any of these cases had recovered. The clinical definition of the disease could not be taken as anything more than a guide. Undoubtedly there was an underlying toxemia, and possibly an infection. It seemed to be pretty generally agreed that Nissl's stain was still on trial, and certainly some very serious objections had been made to it, so that our deductions based upon it must be made with great caution.

Dr. Joseph Collins said that the paper just contributed had served to crystallize what had been in our minds—*i.e.*, that Landry's paralysis had been handicapped by a name and a tradition which for years had prevented us from forming a legitimate conception of the pathology of the disease. All must have been impressed with the fact that Landry's paralysis was a disease dependent upon a poison, and that its clinical forms varied as to the part of the nervous system implicated. It had not yet been proved that the disease was one of the spinal cord or of the peripheral nervous system. When it had been said that Landry's paralysis was a disease dependent upon infection, or upon a toxic substance manifesting its action on a well-defined part, or on the entire nervous system, the pathological location of the disease, so far as known, had been stated. In the case reported in the paper the

lesions were universal, hemorrhagic splenitis, parenchymatous nephritis, and an exudative inflammation in the spinal cord, all of which pointed to an infection. The changes in the cord were virtually those of acute anterior poliomyelitis, a disease which was very probably due to some micro-organisms. The underlying condition should not be described as a "toxemia," which meant a primary blood inflection, but as toxic. If epidemic cerebro-spinal meningitis and acute anterior poliomyelitis had been shown in a number of instances to have been associated with pyogenic micro-organisms, why should not Landry's paralysis be dependent upon such a condition also?

DR. SACHS said that in almost every case in which the disease had been named after a person who had first described it an unusual reverence had been shown for the symptomatology first reported. Thus, Landry had insisted that there should be bulbar complication, yet this was more or less accidental, although present in most of the cases. It would not be right, it seemed to him, to exclude all those cases in which the process had not extended into the medulla, provided the other symptoms were those of acute ascending paralysis. It would be better to speak of the disease under discussion as an acute infectious ascending paralysis.

THE PRESIDENT said that it seemed to him that the so-called Landry's paralysis was an acute infectious process, which at times affected the spinal cord, and at other times affected the nerves to a greater extent. He could not see how it at all resembled the ordinary cases of even the most acute alcoholic multiple neuritis.

DR. JAMES EWING thought the Nissl stain had been very generally accepted as the best method of studying the pathological changes in the ganglion cells. Dr. Dana's trouble with this stain was probably due to the use of alcohol as a hardening agent; the cells should be treated with bichloride of mercury. The examination of the cauda equina and the nerve roots in this case seemed to absolutely negative the opinion expressed by Dr. Dana that in the nerves, if examined, would have been found even more pronounced changes. We would have to assume that the central nervous system and the peripheral nerves were markedly affected, and yet the intervening portion—the nerve-roots—had escaped. In the case reported, sensory symptoms were almost entirely absent. A careful examination of the literature showed that cases of acute multiple neuritis resembling Landry's paralysis were exceedingly rare. The word "toxemia" had been used advisedly in the paper, for the authors were not ready to state that Landry's paralysis was an acute infectious disease. They used the word "toxemia" because they believed the disease was produced by a toxic agent in the blood which, at least in some cases, was of a bacterial nature.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE MONTH ENDING JANUARY 31, 1896.

GARDNER, C. H., Assistant Surgeon. Ordered to examination for promotion January 4, 1896. Granted leave of absence for thirty days, January 15, 1896.

NYDEGGER, J. A., Assistant Surgeon. Ordered to examination for promotion, January 8, 1896.

WIEKES, H. W., Assistant Surgeon. To proceed from New Orleans, La. to Memphis, Tenn., for temporary duty, January 14, 1896.

BANKS, C. E., Passed Assistant Surgeon. To proceed from Washington, D. C., to Boston, Mass., for temporary duty, January 31, 1896.

PETTUS, W. J., Passed Assistant Surgeon. To assume temporary command of Service at Norfalk, Va., January 31, 1896.

GUITERAS, G. M., Passed Assistant Surgeon. To proceed from Gulf Quarantine to Mobile, Ala., for temporary duty, January 18, 1896. To rejoin Station at Gulf Quarantine, January 31, 1896.

STEWART, W. J. S., Assistant Surgeon. Granted leave of absence for ten days, January 27, 1896. Ordered to examination for promotion January 31, 1896.

SPRAGUE, E. K., Assistant Surgeon. Granted leave of absence for twenty days, January 23, 1896.

PROCHAZKA, EMIL, Assistant Surgeon. To proceed from Detroit, Mich., to Chicago, Ill., for temporary duty, January 31, 1896

WISKES, H. W., Assistant Surgeon. Upon completion of temporary duty at Memphis, Tenn., to return to his station at New Orleans, La., January 17, 1896.

RESIGNATION.

GOODWIN, H. T., Passed Assistant Surgeon. Resignation accepted, to take effect March 5, 1896.

BOARD CONVENED.

Board convened to meet in New York city for the physical examination of candidates for appointment in Revenue Cutter Service. Sergeon W. A. Wheeler (Chairman), and Assistant Surgeon H. S. Cumming (Recorder), January 29, 1896.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 4, 1896, TO FEBRUARY 24, 1896.

The leave of absence on surgeon's certificate of disability, granted Captain William O. Owen, Jr., Assistant Surgeon, U. S. Army, is extended one month on account of sickness.

First Lieutenant William W. Quinton, Assistant Surgeon, will be relieved from duty at Fort Riley, Kansas, and ordered to Fort Logan, Colorado, for temporary duty.

Captain C. N. Berkeley Macauley, Assistant Surgeon, died February 6, 1896, at Fort Logan, Colorado.

Major Joseph B. Girard, Surgeon, will be relieved from duty at the Presidio of San Francisco, Cal., and ordered to Jefferson Barracks, Missouri, for duty at that post, relieving Major Robert H. White, Surgeon.

Major White, upon being relieved from duty at Jefferson Barracks, will proceed to Presidio of San Francisco, Cal., for station.

First Lieutenant William W. Quinton, Assistant Surgeon, is relieved from temporary duty at Fort Logan, Colorado, and ordered to Fort Grant, Arizona, for duty at substation San Carlos, Arizona, relieving First Lieutenant Paul F. Straub, Assistant Surgeon.

Lieutenant Straub on being thus relieved, is ordered to Angel Island, Cal., for duty at that station, relieving First Lieutenant Charles E. B. Flagg, Assistant Surgeon.

Lieutenant Flagg upon being thus relieved, is ordered to Fort Du Chesne, Utah, for duty at that post, relieving Captain Henry D. Snyder, Assistant Surgeon.

Captain Snyder, upon being thus relieved, is ordered to Fort Ethan Allen, Vermont, for duty at that station.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FROM FEBRUARY 7, 1896, TO FEBRUARY 22, 1896.

February 7.—LOWNDES, C. H. T., Passed Assistant Surgeon, detached from marine rendezvous, San Francisco, and granted one month's leave.

BAGG, C. P., Assistant Surgeon, detached from the "Vermont," and ordered to the marine rendezvous, San Francisco, Cal.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

TYPHOID FEVER AS A COMPLICATION AND A SEQUEL OF INFLUENZA.[1]

By J. M. ANDERS, M.D., PH.D.,
OF PHILADELPHIA;
PROFESSOR OF MEDICINE AND CLINICAL MEDICINE AT THE MEDICO-CHIRURGICAL COLLEGE; PHYSICIAN TO THE PHILADELPHIA AND MEDICO-CHIRURGICAL HOSPITALS, PHILADELPHIA.

DURING the recent epidemics of influenza, the first of which occurred in the latter part of 1889, I observed cases of influenza that apparently developed into pure typhoid fever. Two instances of this sort I reported elsewhere.[2] In my former paper a brief allusion to some statistics, which showed that out of 338 cases of influenza 6 were complicated with typhoid fever, was made. In one of these typhoid developed after an interval of normal temperature lasting twenty days. Three additional cases, two of which occurred in the practice of Dr. J. N. Snively, are reported below.

Reference is not had here to the rather numerous instances of influenza with marked intestinal symptoms that more or less strongly resemble typhoid fever. Da Costa has recently reported a case of the latter sort.[3] These can, as a rule, be easily separated from typical forms of typhoid fever. Thus, in Da Costa's case, the appearance of the tongue (dry, and red at the tip), the swollen belly, and the marked general debility in the absence of localized inflammatory lesions, pointed to typhoid, but the presence of a markedly irregular temperature record, on the one hand, and the absence of either enlargement of the spleen or the typhoid eruption, on the other hand, showed the case to be one of influenza of adynamic type.

The chief object of the present paper is to confirm the statement made elsewhere that typhoid fever may appear as a late complication of influenza, or may follow this disease.

Among other affections which are known to be associated with la grippe, as complications in varying degrees of frequency, are: pneumonia, both croupous and catarrhal (with which latter disease pleurisy is always, and purulent pericarditis rarely, combined); gastro-enteritis, cerebro-spinal meningitis, etc. Again, its most common sequelæ are phthisis, peripheral neuritis, perineuritis, melancholia, mania and neuralgia.

Cases of influenza which are complicated with typhoid fever are confessedly difficult of correct diagnosis without careful bacteriological studies. I do not doubt that their dual nature has often escaped recognition. At all events, they have not been added to the literature of the subject previous to the appearance of my own article, so far as I know.

No bacteriological observations were undertaken, either in connection with the cases reported previously or those herein narrated; hence, the evidence to show the clinical association of these two diseases has been gained only by observation of the symptoms at the bedside.

CASE I.—E. S., male, aged 22, a student, was taken ill Feb. 20, 1895. The onset was sudden. There were repeated slight chills, followed immediately by fever; intense headache; pains in the muscles generally, and great languor. The following day I was called to his boarding-house, where he had betaken himself to bed. The following condition was presented:

Great prostration; intense headache, the pain being situated especially deep in the orbits and in the region of the occiput. Temperature was 102° F.; pulse, 100 per minute; great pain in muscles of limbs, loins, and the intercostal spaces. The following day, as a result of the action of a purgative, he experienced severe gastro-intestinal pains with marked diarrhea. The latter symptoms were soon controlled by the use of paregoric and intestinal antiseptics. There was now some sore throat, tickling of the pharynx and considerable dyspnea, but not much cough; nor were there any abnormal physical signs referable to the chest. His spleen was at this time not enlarged The diagnosis of influenza was readily made.

The course of the case for the next five or six days also fully corroborated this view. During the latter period the intense headache persisted. There was the usual restlessness, together with utter muscular prostration, and the burning and boring muscular pains, which changed their seat in the manner so frequently observed in la grippe. The fever continued and was of irregular type, and the pulse was increased in frequency proportionately with the fever. At the end of the latter period, or about the time that

[1] Read before the Philadelphia County Medical Society, Feb. 26, 1896.

[2] "A Statistical Study of Influenza," *Philadelphia Hospital Report*, Vol. III.

[3] "Cases of Influenza Simulating Typhoid Fever and Cerebro-Spinal Meningitis," *University Medical Magazine*, Philadelphia, Feb., 1894.

defervescence in the temperature was expected, the evening temperature continued at 103° F., and the morning ranged from 101° to 102° F. The spleen now was slightly enlarged, the abdomen slightly tender, especially in the ileo-cecal region; and there was slight diarrhea, amounting to two or three soft, ochre-colored stools daily. No new nervous symptoms had appeared, but the very severe headache showed little tendency to abate. The catarrhal symptoms, referable to the nose and throat, however, had completely subsided.

March 3d.—Typhoid fever was now suspected. On March 4th (the twelfth day of the illness) the temperature was still pursuing the same continued type. The spleen was found, on palpation, to be considerably enlarged, and there appeared two characteristic typhoid spots on the upper part of the abdomen. The rose-spots faded away in the usual length of time, and subsequently a fresh and more abundant crop put in an appearance. The case was now treated as one of typhoid fever, to wit: by allowing a liquid, nourishing diet, by the use of cool baths, and internally quinine and salol in combination.

Apart from the fever, no other symptom demanded therapeutic measures save the headache and neuro-muscular pains, the latter affecting especially the loins and lower intercostal spaces. While the physical signs were negative, the patient was unable to take a deep inhalation at any time during the attack without experiencing pleurodynic stitches. These pains subsided with the decline of the temperature, and the subsidence of the typhoid symptoms—events which began at the end of the fourth week of the illness. Defervescence by lysis, so characteristic of typhoid, followed.

For the notes of the two instances following I am greatly indebted to Dr. I. Newton Snively, in whose practice the cases occurred.

Case II.—"I was called, Feb. 28th, 4 P.M., to see Mr. A. W., aged 42 years, who reported to me that while at work (as brass-finisher), one hour before my visit, he was suddenly seized with a chill of moderate severity, soon after which he began sneezing and coughing. He developed speedily severe headache, pains in the muscles of the limbs and trunk, and soreness all over the body. At the time of my visit his temperature was 103° F.; pulse, 100; respiration, 24. He had, thus early, a naso-pharyngeal and bronchial catarrh. The heart was acting strongly and regularly. The patient gave a history of having felt well up to within an hour of the chill. During the three succeeding days he was much depressed in spirits; he was restless and wakeful at night; also, complained of nausea and loss of appetite. The bowels were regular.

"Under the usual influenza treatment he rapidly improved, temperature fell to normal on the fourth day, while the cough and myalgic pains were now, also, completely relieved. Appetite was restored, and the patient apparently in a comfortable condition, so that I discharged myself, with the instructions to the family and patient to send for me in case convalescence was in any way interrupted.

"March 7th, two days after I had dismissed myself from the case, I was sent for in the afternoon to see the patient again. I now found him with a temperature of 100° F.; pulse, 90; respiration, 22; and complaining of pain and tenderness in the abdomen, bleeding from the nose, and occipital headache. On physical examination I found the spleen slightly enlarged, the abdomen tympanitic, the tongue heavily coated, the mouth dry, the pupils dilated, and the patient quite restless, but there was no delirium. The nurse reported six loose movements of the bowels during the previous 24 hours.

"From this time on the patient advanced rapidly into characteristic typhoid fever. The temperature curve became very characteristic, the epistaxis grew worse and become so unmanageable that I plugged the anterior and posterior naries on March 9th. The typhoid eruption appeared extensively on the latter date; the diarrhea persisted; the heart became weaker in action and the sounds more feeble; the respirations hurried, and there was a slight cough, with a few bronchial râles on ausculation. His expression grew very dull and heavy, and the cheeks were flushed. The tongue became very tremulous; it was very dry and brown, and sordes collected on the teeth. Headache became very severe; there appeared moderate deafness, stupor, muttering delirium, picking at the bedclothing and imaginary objects.

"Dr. J. M. Anders saw the patient with me on March 9th and confirmed the diagnosis of typhoid fever. He also thought the case had been one, primarily, of influenza, followed by typhoid. I saw the patient on the morning of March 10th, when the nurse gave a rather favorable report, as the patient had slept more than any previous night for a week; his pulse was dicrotic but regular, and marked 112; temperature, 102.5° F.; patient taking milk and whisky regularly and in proper quantities; nose-bleed controlled by plugs; mouth kept moist by placing a large flat sponge (moistened frequently) over it. One hour after my visit I was again summoned to the case, and, upon entering the room, found the patient dead. The nurse, who was an experienced graduate, reported that the patient had suddenly stiffened himself in bed, and when she took his pulse she found it had gone up to 160, was irregular and very weak; that the patient seemed to be in a faint. She administered carbonate of ammonium and gave a hypodermic of strychnine and digitalis, but with no effect, as the patient died a few minutes later. One hour after death large quantities of blood passed from the bowels, thus showing that the patient had died of an internal

hemorrhage. He had shown the hemorrhagic diathesis from the first inception of the typhoid fever. No autopsy was made."

CASE III.—"Mr. J. L., aged 20 years, Canadian by birth, sent for me Feb. 23, 1895. He complained of severe pain in the substernal region, and sharp myalgic pains about the chest. He had a severe cough, paroxysmal and painful in character; he also had acute coryza; he expectorated a scanty, tenacious mucus; his temperature was 102° F.; pulse, 96; respiration, 23. On physical examination, I found a few irregularly distributed subcrepitant râles. The respiratory murmur was feeble. The tongue was coated; appetite poor; bowels were regular, and the abdomen normal. He had severe headache, and was very restless at night, but not dilirious. Was very weak and perspired profusely. He told me he had been working regularly every day, and felt well until this attack came on. He was employed as a stone-carver, and, at the time he was taken sick, was working on the outside at the Bourse building. I saw him every day for four days, when his catarrhal symptoms, fever, and cough subsided. He now sat up out of bed and felt comparatively well, except that he was very weak and languid.

"March 3d I was again summoned to the patient with the report that he was suffering with severe abdominal pains, diarrhea, and vomiting. This was five days after I had made my last visit to him for the influenza.

"I found him with a heavily coated tongue; complete anorexia; distended and tender abdomen; temperature, 101° F.; pulse, 90; respiration, 20. I ordered a salol and bismuth mixture, and put him on a liquid diet. From this time on he passed through a characteristic attack of typhoid fever; temperature higher each day than the preceding, at first, and always higher in the evening than in the morning. The small, slightly elevated, rose-colored spots appeared on the abdomen on the 10th of March, and the spleen was manifestly enlarged. He had the characteristic nervous symptoms—headache, stupor, twitching of tendons, etc. The urine was small in quantity and very slightly albuminous. Convalescence set in after an illness of twenty-eight days, and was marked by falling out of the hair, anemia, etc."

In my present and previous articles are contained the notes of five cases in which typhoid fever was either a complication or a sequel of influenza. It cannot, in view of the statistics before quoted, be claimed with justice that typhoid fever is a frequent complication or sequel of la grippe. That the epidemic prevalence of influenza is attended with an increased number of cases of typhoid fever, however, is also shown by tracings, which appear in my first article.[1] I am of opinion that further observation of influenza, with special reference to its association with typhoid fever, will confirm the dictum that the occurrence of the former disease renders the body more than ordinarily receptive to the typhoid bacillus.

1603 WALNUT STREET.

[1] *Loc. cit.*

DISEASES OF THE ACCESSORY NASAL SINUSES, WITH SUGGESTIONS REGARDING THEIR TREATMENT.[1]

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SECOND PAPER.

THIS paper may be considered a continuation of the one I read before this section in January, 1893,[2] and contains a further record of my experience with diseases of the accessory nasal sinuses. I am aware that the subject has been worn almost threadbare and that many assertions and opinions have been advanced regarding it; but it is my hope, by furnishing details of my work, and the rational deductions therefrom, to assist in placing some of these assertions upon a scientific basis. First, a correct diagnosis; and, second, the best treatment to be employed, are the things for which we should strive. Previous to ten years ago, not 5 per cent. of these cases were correctly diagnosed. Now I may safely say that from 20 to 80 per cent. are detected—the percentage, of course, depending upon the care and energy of the investigator, and the methods he employs. Concerning proper methods of treatment, our opinions must be based upon the results obtained by earnest and capable operators.

In regard to diagnosis. The electric lamp, though often deceptive, is very valuable, especially in antral affections. A unilateral umbra on the lower conjunctiva, with absence of crescentic illumination on the lower lid, and absence of the perception of light when the eye on the same side is closed, will in almost every case, especially if the patient is a blonde and moderately thin, prove to be due to some abnormal condition of the antrum, probably an empyema. I repeat the words used in my last report, that "the electric light is not infallible, but invaluable to one who knows how to use it." The electric tubular lamp placed above the inner canthus and against the frontal

[1] Read before the Section on Laryngology of the New York Academy of Medicine, January 23, 1895.

[2] See *The New York Polyclinic* for February and March, 1895.

bone is only corroborative on account of the relatively frequent irregularity of the frontal cells. The character of the secretion which flows from the natural openings of the cells will indicate the diseased area with more certainty than any other subjective symptom; but on account of the usually distorted and thickened septum, and the large and irregularly formed turbinals, we are prevented from seeing the natural openings or the adjacent parts in a great number of cases. In some cases where the nares are moderately free and roomy, the diagnosis of empyema of the antrum of Highmore can be made by observing the muco-pus issuing from the outer wall, beneath the bulla ethmoidalis. A little further forward, beneath the anterior end of the middle turbinated body, where the tubal and gutter portions of the infundibulum unite, is the place where the muco-pus will appear when there is a chronic suppuration of the frontal sinus. Discharge from the most anterior of the ethmoid cells will occasionally follow the latter course. The other anterior ethmoidal cells will discharge their secretions from the median side of the bulla ethmoidalis, nearly one-fourth of an inch from any of the points where pus from the other three compartments is likely to find exit. The posterior ethmoidal cells drain through the superior meatus downward over the posterior part of the middle turbinal. The sphenoidal cells discharge their contents from an opening in the upper part of their anterior walls, very near the septum, and above the superior turbinated bodies. Since the openings of the antrums, and the sphenoidal cells, are in the upper part of their walls, it is necessary to bend downward the head in order to obtain the greatest flow. In each suspected case, where the diagnosis cannot be made from an orificial discharge or other symptoms, or by transillumination, irrigation should be resorted to either through the normal opening with the syringe and curved tube, or with the trocar and cannula passed through the wall in the middle or inferior meatus, and in an extreme case through the canine fossa. When we have determined that the cavity is the source of a mucous, muco-purulent, or purulent secretion, the question arises: Can we acquire, from the character of the discharge, a reasonable conception of the pathological condition within the cavity? Combined with the history, I believe that usually we can. This is important because it indicates the line of treatment. Other things being equal, irrigation through the natural opening should be tried in nearly all cases for a while, and be persisted in for a few months in those cases where the returned fluid contains decaying, cheesy, mucoid masses, and which show rapid improvement in the symptoms. On the other hand, when the irrigation fluid returns on succeeding occasions, laden with mealy, offensive pus, it is wiser to make an opening at once, 8 or 10 millimetres in diameter, through the malar ridge where the tip of the first molar os is situated. In the event of the first molar tooth being in place, the canine fossa would be the next point of election. In those cases where we cannot enter the normal openings, and when we are not permitted to puncture with the needle or trocar, we can frequently succeed in making a reliable diagnosis by patient and repeated examinations anteriorly and posteriorly, by removing obstructing tissues, and by tying down the soft palate in certain cases, until all spasm is relieved, or (as in Case 25) reach a decision by exclusion.

The most peculiar circumstance about cases of chronic antrum empyema is that the patients seldom complain of pain in the region of the superior maxillary bone. When it exists, which is only occasionally, it is referred to the supra-orbital, temporal, or post-occipital region. In cases of chronic disease of the frontal sinus, pain is almost invariably present, and is increased by bending the head downward. In ethmoidal and sphenoidal disease a dull pain is usually located deeply beneath the bone through the deep temporal and occipital regions. There is a class of cell diseases which we might place under the heading of acute or subacute sinusitis, with little or no stenosis of the natural opening, which improves or gets well during the summer, and has a decided tendency to recurrence in the winter. In these cases the mucous membrane becomes thickened and corrugated, leucocytes and thick pus escape, which becomes partly solidified and undergoes degenerative changes, and acts as a nidus for fermentative and irritating collections.

Under the heading of Treatment I have considered it expedient to classify the various pathological conditions met with, and have suggested the treatment which, in my experience, has been demonstrated to be the best.

CLASSIFICATION.

I. Acute catarrhal, suppurative, and infectious sinusitis, *without* complete stenosis of the normal outlet.

II. Acute catarrhal, suppurative, and infectious sinusitis, *with* complete occlusion of the normal outlet.

III. Subacute, chronic catarrhal, and suppurative sinusitis, with moderately obstructed opening, with or without decayed puro-mucoid *débris*.

IV. Polypoid degenerations.
V. Odontic periostitis and periodontitis.
VI. Atrophic rhinitis.
VII. Tumors and foreign bodies.
VIII. Syphilis.

TREATMENT.

Class I. The cases of acute nature without stenosis are very common, and usually last from three to six weeks. They come on after the manner of an ordinary cold in the head, followed within a few days by very disagreeable feelings of fulness, oppression, and dulness; in some cases a certain amount of headache exists, and a dull feeling is present in the ears. This stage is relieved by a copious flow of muco-pus. During the course of these cases the ordinary treatment for a severe cold is the best. Most individuals who are subject to this condition have from two to four attacks during the year. The rational treatment is one of prophylaxis, which consists mainly in reducing and removing the intumescent and abnormal tissues within the nose, which should be done during the intervals of the attacks.

Class II. Acute Catarrhal, Suppurative, and Infectious Sinusitis, with Stenosis.—These cases, besides requiring the ordinary treatment, demand the evacuation of the retained secretion at once. A limited amount of a saturated solution of cocaine should be applied to the parts around the natural opening, and a persistent effort should be made to enter the cell with a tube, or, failing in this, penetration with trocar and cannula should be made use of, and the cavity should be carefully aspirated and irrigated. As soon as its patulency is restored, the patient recovers rapidly. They demand the same treatment during the intervals as that described for Class I. Cases 6 and 45 are good types of this class.

Class III. Subacute and Chronic Catarrhal and Suppurative Sinusitis, with Moderately Obstructing Stenosis, Thickened Mucosa, with or without Retained Decaying Puro-Mucoid Débris.—This class of cases is the most fruitful source of post-nasal catarrh, and is rather difficult to diagnosticate accurately. The symptoms rarely indicate the latent pathological condition sufficiently to warrant the operative procedures necessary for a proper diagnosis or treatment. Attempts should be made to irrigate these cases through the natural openings, and frequently we are rewarded with a cure or decided relief, as shown in two cases, Nos. 5 and 7. It is taken for granted that in all classes of cases any abnormal intranasal condition should be rectified. When these cases resist the irrigation treatment and are of sufficient importance, a counter-opening should be made in the cell walls and proper curettage and drainage should be carried out.

Class IV. Polypoid Degenerations.—This class furnishes by far the majority of the operative cases. Woaks, Bosworth, Casselberry, and others have well described them and their treatment. Cases 2, 3, 9, 10, 11, 12, and 15 of my series typically illustrate this class. Large counter-openings, packing, careful and repeated curetting, good drainage and irrigation, are essentials for successful treatment.

Class V. Odontic Periostitis and Periodontitis, Sometimes Terminating in Caries and Necrosis.—It is universally conceded that the offending tooth in this class of cases should be removed, and, if the case is of long standing, the cavity should be opened, carefully curetted, and dressed. Formerly, following the advice of many dentists and surgeons, after the tooth had been extracted I drilled upward through the socket; but the after-history of such cases has caused me to regret it, Cases 3 and 4 being unfortunate examples. The principal objectionable features are: the distance through the bone to the floor of the antrum; the dense, thick tissue of the gum; the difficulty experienced in curetting, the long walls of the opening preventing the proper play of the handle of the curette; the easy entrance of food into the antrum, and the necessity, while eating, of plugging the tube when one is worn for drainage. I take it for granted that every one would prefer the lower border of the malar ridge for penetration in all cases where the tooth has been absent for some time. You will find this point of election marked on the skull which I pass around. The most serious obstacle which I have met with is the decided objection of the patient to losing a tooth.

In nearly all extensively diseased cases, where some other operation was performed in place of the one through the malar ridge, the patient and myself have both had cause to regret it. On the other hand, all of the worst types of cases have done well when the operation was properly performed through the point of election. The surgeon has complete subsequent control of the antrum, and can keep it open and curette it at any time without inconvenience to himself and with very little pain or annoyance to the patient. The canine fossa, where the bone is very thin, is the next point of preference; the main disadvantages are its distance up under the cheek and the elevation of the opening above the floor of the antrum.

The results in the cases where I penetrated

through the walls of the meatus have not been so satisfactory as those reported by Grant and other European writers. I have noticed that many cases, under careful and thorough curetting, ultimately did better than those which were extensively or over-curetted, or those in which the curette was used too moderately. I have found the greatest benefit from recuretting, at intervals of about one month, until all bare bone is covered and granulation tissue cicatrized.

Class VI. Atrophic Rhinitis.—The bacilli of atrophic rhinitis frequently find a permanent home in the sinuses. Robertson, of Newcastle-on-the-Tyne, has done some original and efficient work in this class of cases. I have found two kinds of cases apparently caused by this affection: one in which the semi-solid putrid *débris* has become confined in the cavity, and acts as a causal factor in keeping up the diseased condition; and the other in which the tissues have undergone degenerative changes. Irrigation will frequently relieve the first; curetting and drainage would be necessary to restore the latter.

Class VII. Tumors.—Tumors occasionally develop within these cavities. Early diagnosis is of the greatest importance, for it frequently enables the surgeon to save the patient's life by timely removal, and rescues him from a condition of intense pain and distress. Among the benign tumors, mucoceles and osteomata are the most important. The mucoceles usually develop in the ethmoidal cells, and extend antero-posteriorly through the long diameter. This is accounted for by the intercellular walls offering the least resistance. They generally extend backwards, breaking down all the partition walls and finally reaching the posterior wall of the sphenoid cells. At the same time they extend forward into the frontal sinus or against the orbital plate, cracking and pushing the same above the inner canthus of the eye. If these cases could be recognized by the symptoms and by intranasal inspection, there would be more credit for the rhinologist and less opportunity for the oculist to puncture the protruding sac.

Among the malignant tumors, sarcoma (long- and round-celled) and osteo-sarcoma are the most common. Cases 31 and 34, which belong to this class, are worthy of note. The prompt removal of the superior maxilla in Case 34 has apparently cured him of an otherwise fatal disease. Case 31 was considered inoperable, and died a few months afterward. The toxins of erysipelas and the bacillus prodigiosus modified the patient's symptoms favorably for a time.

Class VIII. Syphilis.—Gummata frequently develop in the walls of one of the accessory sinuses. I have now under observation three cases of gumma of the internal wall of the antrum of Highmore. They are doing well under the iodide of potassium and occasional scraping of the necrosed bone. The openings into the cavities are about one-half of an inch in diameter, and quantities of sticky muco-pus escape. This is gradually lessening under cleanliness and irrigation.

There are a few points concerning the treatment of these cases to which I would like to direct your special attention:

1. That no case of long-standing and extensively diseased area can be considered cured within a few months after the operation. The aperture should be kept open for from six months to a year.

2. The electric light not only indicates the direction to be followed in the investigation, but also furnishes the courage and desire to ascertain the condition of the cell.

3. The malleable-handle curettes are very valuable when used as diagnostic or searching probes. One can learn to make out the pathological condition of the cells through a trained and experienced touch about as well as when the parts are seen.

4. The headed rubber tubes, made by Meyrowitz, have proved to be the most effective and pleasant means of drainage. They can be cut to any length, and are elastic enough not to irritate the gum and cheek.

I append the histories of some of my series of cases, trusting that you will take warning from the negative or ineffectual action in the unfortunate ones, and that you will be able to obtain some useful information from those that were successful.

Case 25 stated November 29, 1893, that he had had bronchial trouble all his life, annoyed by a profuse discharge of mucus from the nose and pharynx for years, and troubled with coughs, and a copious discharge from the bronchial tubes, with one bronchial hemorrhage in September.

Both ethmoidal regions were filled with polypi, and muco-pus issuing from both hiati and ethmoidal cells. The electric light produced a dark umbra beneath both eyes.

Removed polypi and the anterior ends of the middle turbinated bones, and irrigated the antrums for several months. The patient gradually improved, bronchitis almost disappeared, and there was but little mucus in the nostrils. He gained about 25 pounds in weight, and showed decided improvement in every respect.

Case 26, aged 51, informed me in May, 1893, that he had tried many physicians and remedies

without any relief. A muco-purulent secretion dropped incessantly into the rhino-pharynx. At times this was yellow, and on rare occasions was blown from the anterior nares. His vision became very dim every morning, and there was slight tinnitus and impaired hearing. For years he had sought climatic relief from his catarrh. Three winters were passed in southern countries or on his yacht in southern seas, and the summers in northern and mountainous regions, the only relief being an occasional abatement of the extremely disagreeable catarrhal discharges.

After a long and careful examination, found the nose large and deep in both directions; septum slightly deflected; the turbinals bulged toward the septum; a few small polypi in the right middle meatus, but the nose was free from all secretion so far as anterior inspection could detect. There was a constant stream of muco-pus flowing down into the pharynx on either side of the soft palate near the Eustachian tubes, and he expectorated every few minutes. Transillumination produced a decided umbra beneath the left eye; with but a very slight translucency below the right inferior eyelid. I could not enter either antrum through its hiatus, although I tried many times on different occasions. It was a long time before I could train the soft palate to drop low enough so that I could see the posterior tips of the inferior turbinals. I could then detect the muco-pus issuing beneath the outer lower parts of the posterior inferior tips, near the pterygoid plates and palate bone. I informed him that I suspected antrum trouble, but could not prove it, and offered to make an exploratory puncture, but he refused to permit it because I would not positively promise relief. I examined and treated him regularly for several weeks, and he expressed some relief after the reduction of the tissues by cautery, removal of the polypi, and energetic spraying and douching. Summer came on, and I did not see him again until the fall.

He informed me that he had consulted other specialists since he saw me, and that one of distinguished reputation advised him not to allow me to operate on him, as he did not need it. He finally consented, under pressure, to submit to the malar-ridge operation. All his teeth were in, excepting the first right upper molar, and they seemed to be in good condition. I cocainized the tissues over the right malar ridge, made the usual incision, exposed the bone and penetrated it at the point of election with the smallest-sized burr drill, propelled by a one-eighth horse-power electric motor. This was rapidly accomplished with very little pain. I passed a saturated solution of cocaine on a cotton applicator into the antrum, enlarged the opening to about four millimetres, inserted a small-sized malleable-handled curette, and with astonishment found the anterior part of the antrum smooth and in a moderately healthy condition. On passing the curette backward and downward, a soft, spongy mass was found, which proved to be nearly an ounce of large granulations, beneath which the bone was exposed and carious to the extent of more than a square inch. After enlarging the opening to eight millimetres, a quantity of muco-pus was curetted away with granulations and softened bone. I packed the cavity with iodoform gauze, and the discharge from that side stopped at once. After an interval of several weeks had elapsed I had the first molar on the left side extracted, and a similar operation to the one done on the other side was performed, and the same careful treatment carried out. After this, all discharge into the mouth stopped. The mucosa throughout this cavity was thickened to an extraordinary extent, and came away under the curette in large pieces covered with muco-pus. It seemed to be composed of hypertrophic rather than granulation tissue. Occasional pieces of soft and roughened bone were detected with the curette. The cavities were drained and irrigated for several months, and curetted at intervals. I examined him about three months ago and found that translucency under each eye was increasing. There were no lumps of mucus in the antrums when they were irrigated. Catarrh was a thing of the past. He had not been troubled with dimness of vision since the operations.

Case 27, aged 26, had been suffering for several days from severe pain and oppression in the right side of the face, with a sensation as though the face and orbital cavity would burst. Her septum was deflected with an ecchondrosis, turbinals very much swollen, and trans-illumination produced umbra under the right eye. I reduced the intumescent tissues with cocaine, and found the tissues about the right hiatus swollen and papillomatous in appearance. On introducing one of the smallest silver tubes the confined pus escaped with the irrigating fluid, which gave her immediate relief. I removed by snare a fungating papillary growth, about three millimetres in diameter, from the internal margin of the hiatus. After several irrigations at three days' intervals the cavity gradually returned to a normal condition.

Case 28, aged 27, consulted me in September, 1893. He gave a history of extreme suffering, which had existed more than twelve years. His principal symptoms were: almost unbearable headaches, nasal catarrh, constant dropping into the throat, a tickling sensation, and a great excess of sputa, chiefly from the bronchi, in the shape of large grayish and greenish lumps. He was very nervous and unsettled mentally, and did not sleep well; he was given morphine by his physicians until the habit was almost acquired, and he then resorted to the extreme use of alcoholic stimulants in order to deaden the pain.

Polypi were demonstrated in both middle meati, with muco-pus issuing from both anterior ethmoidal cells, both frontal sinuses and antrums of Highmore, and the right posterior ethmoidal cells. I removed the polypi and the left middle

turbinal, passed the smallest sized curette into the frontal sinuses and irrigated the antrums, frontal sinuses, and anterior ethmoidal cells with the silver tubes. He experienced great relief for a while, then the frontal headaches on the right side returned and were very severe.

On November 10th, under ether, I performed an improved frontal-sinus operation, as follows: After the eyebrow was shaved, a perpendicular incision was made over the centre of the right nasal bone, extended upward across the articulation of the nasal and frontal bones to the middle of the space from which the eyebrow grew on the supra-orbital ridge, a point about twelve millimetres from the median line of the skull; from thence the incision was carried outward about ten millimetres to within two millimetres of the supra-orbital notch; from there it was made, at right angles to the latter, upward about fifteen millimetres on the forehead. The blood-vessels were compressed. The bone was well exposed and the flaps retracted. An opening was chiselled into the frontal sinus by commencing about twelve millimetres to the right from the median line of the frontal bone; the point of commencing was on a level with a point about one and a half millimetres below the supra-orbital notch. The opening was enlarged to twelve millimetres in diameter. Polypi, granulation tissue, and pus were found in the cavity, which was carefully curetted. The incision above the brow was brought together with sutures, and united by first intention without any scarring. In making the opening care was taken that none but the under surface of the supra-orbital ridge was removed and that no injury was done to the superior oblique muscle. The cavity was packed with iodoform gauze for a month, after which it gradually healed. The patient has been free from discharge and pain from this sinus since the healing. The small scar is not objectionable. I subsequently opened his antrum through the malar ridge, and curetted the polypi and granulation tissue. The cell was kept open with the rubber tubes for several months. No secretion can now be detected coming from the hiatus.

In the summer of 1894 I removed the middle turbinal on the left, cut into the ethmoidal cells through the floors, and curetted them and the left frontal sinus; then I irrigated the left frontal sinus, left antrum, and left ethmoidal cells. The discharges were nearly all arrested and he is apparently well, but it is probable that the left frontal sinus some day will need the same treatment as that employed on the right. In a recent letter he said that he felt well and could do the work of two men.

Case 29 stated, June, 1893, that for fifteen years he had been suffering from catarrhal pain and offensive discharge which had been much exaggerated for the past five years. Several operations had been performed upon his nose, but had produced no apparent relief. The odor was so extremely disgusting that one was nauseated while making the examination. I found some polypi and carious bone in the right middle meatus, with mucopurulent discharge flowing from the anterior ethmoidal cells and the antrum of Highmore. The electric light, placed in the mouth, showed a very bright illumination beneath the left eye, and an extremely dark umbra beneath the right. On June 19th the decayed roots of the two posterior molars and a part of the alveolus were removed, the cavity drilled and found full of granulation tissue, pus, carious and necrotic bone, and cheesy *débris*. When cleared it was then packed with iodoform gauze, which remained in for several days, and was afterward irrigated regularly, and lightly curetted upon several occasions. The patient seemed to be a different man from this time on. Previous to the operation he had been despondent and wretched in every way; afterward he became hopeful, cheerful, bright, and active, and entered upon new duties with energy. I received a letter from him several months after the operation, in which he informed me that he was apparently well, save a little mucous discharge, and felt himself redeemed from a life of wretchedness and uselessness.

Case 30, in April, 1894, stated that all her upper teeth had been extracted in 1891, and that immediately afterward she suffered from severe pain in the right antrum, which lasted for one week. Then pus was discharged from the right naris, with abatement of the pain. After this she was fairly well for a year; then her general health became very poor. Another abscess formed in the antrum. Her family physician drilled an opening through the alveolus, and pus flowed out. She informed me that she had adopted the novel method of wearing a rubber tube, extending from the antrum out of the corner of the mouth, until seven weeks since. About two months previous to her coming to me, the general surgeon had made a large opening through the alveolus and curetted the cavity. Inspection demonstrated a number of polypi growing from the upper, the anterior, and the lateral walls of the antrum. One large polyp grew from the bone beneath the orbit, extended through the hiatus into the nose, filled the rhino-pharynx, and rested on the soft palate. The polypi were removed with a snare and curette. New ones developed several times, but were finally eradicated. The patient is well now, and comfortable.

Case 31 applied to me in May, 1894, complaining of great pain in the right cheek under the eye, which extended back to the ear. Upon examination I found a swollen, bulging condition of the parts above the alveolus and in the canine fossa; there was absence of sensation in the integument of the cheek; the tissues of the middle meatus were edematous and semipolypoid. I made an exploratory operation through the canine fossæ; the bone was soft, and the cavity was filled

with a peculiar excrescence which seemed to penetrate the softened bone; all the symptoms were those of osteoma-sarcoma. The case was deemed inoperable because the process had extended into the ethmoidal-spenoidal bones and cribriform plate of the ethmoid. Toxins of erysipelas and the bacillus prodigiosus were tried, with some relief at first, but the patient gradually grew worse, and died after a few months. In my opinion, if the proper diagnosis had been made in the incipient stage of the disease, and the superior maxillary bone removed, she would probably have been cured; undoubtedly her life would have been prolonged many years.

Case 32, November, 1893, complained of pains and of a dull, heavy feeling in the head, weak chest, loss of voice at times, cough and expectoration in the mornings, and of a thick and copious discharge from the right nostril. He had been suffering in this way for twenty years. Upon examination the electric light produced an umbra beneath both eyes; but the shadow was much more intense under the right; a small polypus could be seen in the left middle meatus, and several polypi, with flowing muco-pus, in the right middle meatus. I removed the polypi and opened the antrum with the electric drill through the right malar ridge, the first molar tooth being absent; curetted from the cavity polypi, granulation tissue, and pus; I then packed the cavity with iodoform gauze. After a few days I removed the gauze, and gave him instructions to irrigate the cavity with the usual fluid. The last time I saw him, several weeks after the operation, he was doing very well.

Case 33, aged about 25, came under my observation several years since. She had suffered with severe headaches from childhood, from which she was seldom free; in the early morning she was troubled with sneezing, a tickling sensation in the nose, and a watery discharge, which abated about 2 P.M. The headaches were supra-orbital, and rather more severe on the right side; the septum was deflected to the left; inferior turbinates hypertrophied. I treated her for several years, reducing the turbinates and the mucous membrane over the tubercle of the septum; removed the anterior tip of the middle turbinate; cut away part of the anterior ethmoidal cells, and tried to enter the frontal sinus through the infundibulum with probes and curettes; invariably the end of the instrument seemed to be arrested by a solid substance about where the floor of the frontal sinus should be. Under ether I made a curved linear incision along the side of the nose and beneath the brow, to the supra-orbital notch; I consented, contrary to my better judgment, to drill a hole into the sinus. I drilled to the depth of four or five millimetres, until I came to a space where two layers of bone were in juxtaposition, and separated by a reddish streak presenting somewhat the same appearance as that found between geological *strata*. I decided then that if I had used the chisel the results would have been much more satisfactory to both myself and the patient, and determined to abandon the drill hereafter in this class of cases.

The patient was afterward operated upon by a general surgeon, who chiselled away the anterior wall of the frontal sinus and found a large osteoma completely filling the cavity and pressing firmly upon the walls. The patient was decidedly relieved from her headaches for a while, but I understand that they have returned with their original severity.

Case 34 was sent to me by a general surgeon in February, 1894, for my opinion concerning the right antrum of Highmore. He had been troubled with a diseased tooth, pain in the right upper jaw, and with an extremely unpleasant discharge for two years. A diseased tooth had been extracted. In August, 1892, a local dentist opened the antrum, but the pain continued. In September, 1893, Dr. Wyeth (the patient being under ether) opened and curetted the antrum through the tooth-socket, but little relief from the discharge was experienced. In January, 1894, Dr. Wyeth re-curetted the antrum, but the unfavorable symptoms continued.

In passing the curette over the antrum I noticed a thick and peculiar lining on the antrum walls, which produced very much the same sensation as one experiences when scraping a raw potato. I expressed my opinion that it was a malignant neoplasm, and, upon Dr. Wyeth's suggestion, a specimen was sent to Dr. Prudden, who reported large-celled sarcoma. In March, 1894, Dr. Wyeth removed the superior maxillary bone, with part of the pterygoid plate. The patient recovered from the operation, and seems to be doing very well with an artificial jaw, and continues in the practice of his profession as a lawyer. There remains one unfortunate result: the continuance of a constant sweetish and extremely disagreeable taste in the mouth. There is a little muco-pus issuing at the point where the section of the naso-lachrymal duct was made.

Case 35 applied to me for an opinion in May, 1894. He had consulted several specialists, and had received various opinions in regard to his trouble. Muco-pus was issuing from the right middle meatus, and seemed to be due to a burrowing empyema beneath the periosteum in the nasal wall of the antrum of Highmore, as gentle pressure with the probe along the middle meatus caused pus to flow actively. I informed him that he was suffering from empyema of the antrum, and should submit to an operation. I afterward received a letter stating that a tooth had been removed and the antrum bored into, with relief from the symptoms.

Case 36 was found suffering intense agony in the right side of her face, beneath the eye; she had not slept for many hours. Considerable tenderness existed in the canine fossæ, and I found it impossible to enter the antrum by gentle means,

as it was closed and bulging. On account of her delicate condition I did not use the exploratory trocar, but advised perfect rest, anodynes, steam inhalations of benzoin, turpentine, carbolic acid, and eucalyptol. I was rewarded in a few hours by a sudden, copious, and offensive discharge of muco-pus from the right nostril, with immediate relief from the symptoms. The patient made an uninterrupted recovery.

Case 37, in September, 1894, sought relief from a post-nasal catarrh and an unpleasant odor, which seemed to be principally on the right side, and which had troubled her for ten years. The nostrils were fairly roomy and some muco-pus was lying on the right side of the soft palate. The right antrum was dark when the electric lamp was used. I passed a tube through the hiatus, and a quantity of mucus and mealy pus was dislodged. Her physical condition would not permit a surgical operation for several months, so I irrigated the antrum four to six times a week for over a month. The discharge stopped, and she improved decidedly in feelings. She lives in a distant city, and informs me that the catarrh is returning, and that she intends to come on and have the alveolar operation performed.

Case 38, aged 48, commenced to have neuralgia at the age of thirteen in the right upper jaw, which became much worse at eighteen. The upper teeth were extracted with a part of the aveolus at this time. The pain then ceased until nine years ago. Every spring for eight years she has had very severe attacks of facial neuralgia on the right side, which last from one to three weeks. In February, 1894, the pain returned and continued up to June, and was of the most excruciating character. She consulted me at this time. She gave a history of several attacks of a copious discharge of muco-pus from the right side, attended with fulness and dulness in the antrum and severe occipital headaches.

I opened the antrum with the electric drill through the malar ridge. The bone was very soft and had an uneven surface and bulged outward against the cheek. There was a little muco-pus in the cavity, with very slight granulations and small roughened areas. The cavity was irrigated and kept open. The neuralgia ceased; the patient was comfortable and relieved until the 5th of the present month, when the pain returned with all its original intensity. On the 17th I removed the tissues which had contracted over the opening in the bone and recuretted the cavity, removing a quantity of tissue with some resemblance to an osteo-sarcomatous excrescence. The pain has ceased since the 17th, and I have sent the tissue to the microscopist for examination.

Case 39, in 1894, was suffering from nasal catarrh which was rather profuse, and with frontal headaches; his general health was impaired, and he was in a depressed condition mentally. He informed me that he had been treated by specialists for some time, one of whom removed the left middle turbinated body. After this operation he had experienced some relief from the symptoms of fulness and from the headaches, but the discharge had not lessened. There was a large cavity in the region of the middle meatus, which was caused by the absence of the middle turbinated body. I succeeded in entering the antrum through the natural opening; irrigated it at intervals of about a week for more than a month. Very offensive muco-pus was dislodged by the irrigating fluid. The patient improved decidedly for several days, and then the objectionable symptoms would recur. He refused to submit to an operation through the alveolus or the canine fossa, but I hope to induce him to do so, and will report the case at some future time.

Case 40, F. G., was referred to me by a neurologist. He had complained of the most intense neuralgia in the right side of his face for three years past. The antrum of Highmore, by every test, proved to be in a good condition; the electric light placed in the mouth produced a bright spot under the eye; no secretion flowed from the meatus, and there was nothing abnormal found in the antrum.

It was suggested that possibly some tooth-root or an exostotic condition was the cause of the neuralgia, most of which was located in the walls of the antrum, and I was requested to make an exploratory puncture. I drilled an opening, 4 millimetres in diameter, through the antrum wall at a point on the anterior part of the malar ridge, and it was interesting to note the glassy smoothness of the antrum walls. A clear and normal secretion came from the opening with the dull curette, which had been carefully passed over the internal surface of the antrum.

This is the only healthy antrum I have ever opened, and the difference in the sensation, given by the probe and the curette, is so great that it has been of the utmost assistance in determining the pathological states and areas of respective sinuses which I have opened.

The patient was partially relieved from the neuralgic symptoms—this was probably due to the section of the anterior dental nerve; and the wound healed, by first intention, in four or five days.

Case 41 in 1894 was suffering from a thick, crusty, offensive discharge from the nostril. Inspection showed a gummatous degeneration of the septum and the left internal wall of the antrum of Highmore from the hiatus downward, involving the middle part of the inferior turbinated. I removed the degenerated masses and some necrotic bone; found the left antrum filled with thick, muco-purulent tissue and *débris*. The cavity was cleansed, and curetted around the margins of the opening. The patient rapidly improved under 75 grains of potassium iodide three times daily.

Case 42 applied to me in 1894. She was suffering from such severe pains in the left side of her head that she had only slept a few minutes at a time for several nights and days. I re-

moved the gummatous wall of the left antrum; found the cavity extensively diseased and full of putrid secretion and tissue *debris*. Besides local measures I gave her iodide of potash; controlled the pain for a few days with morphine. She improved rapidly, and is now apparently well.

Case 43, aged 29, in March, 1894, had been suffering for some time from a profuse discharge in the nostrils, which was more excessive on the left. The septum was deflected to the left, and there was an ecchondrotic growth. On the convex surface muco-pus was flowing from the obscure region of the left middle meatus, and there was a moderate amount in the right nostril. He complained of severe pain in the region of the left antrum of Highmore, and also of temporal and orbital neuralgia. I removed the septum growth and the anterior end of the middle turbinated, and entered the hiatus with an irrigating tube. A quantity of degenerated pus and mucus came away with the fluid. There was a certain amount of improvement after the treatment, but the pain and muco-purulent discharge continued. He refused an operation at first, but after persistent persuasion he submitted to the malar-canine operation, which was performed on June 8, 1894. The first molar tooth was extracted and a large opening, at least ten millimetres in diameter, was chiseled into the walls of the cavity. The bone over nearly the whole surface of the antrum was not only denuded of its mucous membrane, but was carious and necrotic in many places. I curetted the cavity carefully and removed some of the largest granulations that I have ever seen come from the cell. The cavity was packed with iodoform gauze for several days; the pain subsided, and the patient improved in flesh and appearance. Granulations are gradually forming over the diseased bones, which require to be curetted occasionally. He wears a rubber tube and irrigates the cavity regularly. Pus is rarely detected in the small, thick mucous collection which passes away with the fluid. This case is classed among the severest forms, and takes from one to three years to be relieved so that the opening can be permanently closed.

Case 44. Upon examination I found him suffering with a gummatous degeneration of the septum, and a large opening in the internal wall of the antrum of Highmore, extending down nearly to the floor of the nose. There was a polyp, as large as the first joint of the thumb, protruding through this opening into the nostril. I removed the polyp, curetted away a quantity of pus and degenerated gummatous tissue, and used the usual irrigation and potash treatment. The patient made a rapid recovery, and his weight increased from fifteen to thirty pounds within a few months.

Case 45 sent for me to visit him. I found him almost in a state of collapse, and in great agony. He had been suffering for several days with intense pain together with a full feeling in the right frontal sinus. I sprayed the nostril with cocaine and applied it on cotton; found the hiatus and infundibulum very much swollen and the middle turbinated body moderately so. I passed a tube into the infundibulum and injected gently but firmly a borated solution, and was rewarded with a gush of pus and offensive gas, and with an immediate cessation of the severe symptoms. The muco-purulent discharge continued for a few weeks, but the patient recovered completely.

VERATRUM VIRIDE IN PUERPERAL ECLAMPSIA.

By F. K. WILLIS, M.D.,
of Watkins, Kan.

My object in referring briefly to this drug is in hoping to bring it to a greater prominence before the profession. Those who have used it will, I am sure, substantiate me when I say that it occupies entirely too obscure a position in our professional advancement. Why this sovereign remedy has not attained a wider reputation is, I think, due to feared depression following its use—a fear entirely unfounded. This statement is borne out by the absence of a single recorded case of death attributable to its use in eclampsia. Indeed, Periquet, quoted by Jewett, states that "he has found but a single recorded fatal case from its use, that of a feeble child, aged one year and six months, to whom thirty-five drops of the tincture had been given in divided doses."

The action of veratrum viride in eclampsia seems to be but little understood by the profession at large. It probably does not have any direct anticonvulsive properties. "Lethal doses produce convulsions in animals, doubtless due to accumulations of carbonic acid in the blood."[1]

It would seem that its beneficial action in eclampsia is twofold—its characteristic action on vascular tension and its diuretic action. There can be no doubt that it *relieves* (and I use this term advisedly) convulsions by paralyzing the vaso-motor nerves, "thus relieving spasm of cerebral vessels and consequent cerebral anemia, to which convulsions are believed to be due."[2] Were that its only action, relief would be only temporary, but it also relaxes the tension of the renal vessels, the secretion of urine occurs freely, thus eliminating the poison floating in the blood, and to this action only can be attributed its *curative* power in eclampsia. I believe all authorities concur in the opinion that eclampsia is essentially a toxemia resulting from failure of elimination of

[1] Barthalow.
[2] Percy, quoted by Jewett.

poison or poisons, principally by kidneys, but to some extent by liver, lungs, and intestines.

Experiments upon myself and office-boy show a decided increase in urinary excretion after taking small doses—3 to 5 min. fluid extract. Taking into consideration the fact that the dose was many times smaller than total dosage necessary for an eclamptic, it can readily be seen how much greater diuretic action there would be were the dose increased. This action would also be much more noticeable when renal vessels are suffering under excessive vaso-motor tension than when in health.

I shall only report in detail, briefly, two cases, both admirably illustrating its diuretic action, and incidentally its claim to rank first of all remedies in puerperal eclampsia. In each case it was used after all other resources, bleeding excepted, had failed.

Case I.—Mrs. B., primipara, aged 20 years. Had been delivered of twins, after an easy labor, twelve hours previously. I found woman comatose; pulse hard and fast, estimated at 180 per minute; great edema. I introduced a catheter and secured about an ounce of urine, which, upon boiling, yielded three-quarters its bulk of albumin. At outset she had been placed in hot bath. Morphine and chloral had been given, and chloroform was pushed. She had grown rapidly worse, coming out of one convulsion only to enter another of greater severity. In all she had about twenty-five.

I advised veratrum. Fifteen minims of the fluid extract were given hypodermatically, followed in fifteen minutes by 5 min., and that by a similar dose in half an hour. After second dose the convulsions ceased, to return no more; pulse gradually fell to 50 beats per minute; urine was passed involuntarily; edema rapidly disappeared; consciousness was regained in twelve hours, and patient made an uninterrupted recovery. It might not be amiss to here state that she has since been twice pregnant, presenting each time all the prodromata of eclampsia, which each time disappeared under veratrum, she going to term and each time giving birth to a fine boy.

Case II.—Occurred in consultation practice of my friend, Dr. Campbell, of Troy, Kan., and is by his permission reported. Mrs. G., multip., aged 29, pregnant four months. When seen by him, presented a highly edematous condition, comatose, pulse 160 per minute. Catheterization secured about half an ounce highly albuminous urine. Attending physician had pushed chloroform, morphine, and chloral. Patient had rapidly grown worse from outset. Veratrum was suggested by Dr. C. Five minims of Norwood's Tincture were given hypodermatically every hour. After second dose, pulse fell to 70 beats per minute. Convulsions ceased, kidneys resumed their function, and patient made an early recovery. Induction of labor was recommended, but not consented to at the time.

Veratrum viride not only arrests convulsions, but in several cases in my hands it has prevented them when threatened. None has suffered eclamptic convulsions who came to me complaining of headache, nervousness, presenting some edema, a full, hard pulse, etc. In this class of cases, 5 min., two or three times daily, according to urgency of case, should be given. When paroxysms occur, always administer hypodermatically 15 min. fl. ext. at once, followed in half an hour by 5 min., repeated if necessary. It may be necessary to continue administration for twenty-four hours or longer to prevent recurrence; of that the attendant must be the judge. Generally speaking, the pulse should be held at 50 or 60 for a day or two.

CLINICAL LECTURE.

THE RESULT OF VAGINAL HYSTERECTOMY; PROLAPSUS UTERI.[1]

By E. E. MONTGOMERY, M.D.,
of Philadelphia;
Professor of Clinical Gynecology in the Jefferson Medical College; Gynecologist to Jefferson and St. Joseph's Hospitals; President Philadelphia Obstetrical Society.

Case I.

Gentlemen:—One week ago I did before you a vaginal hysterectomy upon a woman who had previously had a ventro-fixation and lost an ovary. You remember we had considerable difficulty in separating the band between the fundus and the anterior abdominal wall. She did fairly well for the first forty-eight hours, when we removed the clamps. At the removal of the clamps I noticed that one of them was stained with a slight discharge of blood. But careful examination of the tissues in the vagina did not reveal any sign of bleeding. After visiting the other patients in the ward and before leaving the building, I was called to the patient and found the dressing saturated with blood. The gauze packing was removed from the vagina and the cavity thoroughly repacked, which apparently controlled the hemorrhage. She however, did badly. She could not retain nourishment, was continually vomiting, and this persisted for the next two or three days in spite of everything we could do. The gauze was removed at the end of forty-eight hours and showed that the hemorrhage had been controlled. The patient continued with disturbance of the alimentary canal and inability to retain nourishment. Yesterday morning she suddenly went into a state of collapse and died. The autopsy disclosed peritoneal inflammation. It was found that the pelvic peritonitis which had developed, in a patient enfeebled by poor nutrition prior to her entrance to the house, and the resulting hemorrhage, had

[1] Delivered at the Jefferson Hospital, January 28, 1896.

caused death. I am sorry to have had to give you such a history, but I could not otherwise be true to my promise to you. I show you the report kept of this patient, in which you see that the temperature was subnormal prior to the operation. Subsequently the highest temperature was 100⅘°, but after the removal of the clamps following the hemorrhage it fell to 97°. She, however, reacted the next day, and following that it remained above normal until just before her death. This case also taught us an important lesson regarding ventro-fixation. There has been considerable question of late as to the influence of this operation on subsequent pregnancy. Numbers of cases have been reported in which women have aborted, the uterus has ruptured, or dystocia has resulted, owing to the position of the organ. It is important in every operation upon the woman not to lose sight of its possible effect upon her life, or that of her offspring should she become pregnant. Although the operation may give relief from the symptoms the patient experiences, if it causes danger in the performance of the physiological process to which a woman may at any time be subject, we should hesitate as to its performance. I this morning did a ventro-fixation, and in the light of this experience, instead of using buried sutures, I introduced the lower two sutures through the abdominal walls, exclusive of the peritoneum, and the fundus of the uterus, purposely turning back the peritoneum to bring the covering of the uterus in contact with the muscular layer of the abdomen. This procedure will make a pretty firm band of union, but not so resisting as if buried sutures had been placed to keep the parts continuously in apposition. As the sutures only remain ten days, the adhesions become to some degree stretched and the band of union is longer and more likely to give way in subsequent stretching than would the band resulting from a more firm fixation by buried sutures.

Case II.

The next patient is 63 years of age; she has had four children, with all of which the labors were difficult. She is a laboring woman. She has noticed for the last few years a protrusion from the vulvar orifice, which has increased within the last few months. It is red, inflamed, and as I push it to one side you notice an orifice, the borders of which are denuded and angry. This is the cervix, which has been lacerated and undergone an ectropion. Now, in this patient we have a protrusion from the vulvar orifice, and you naturally ask, what is it? A woman will come to you with such a protrusion and will tell you that it is falling of the womb. It may be a growth in the vagina, a vaginal tumor, a prolapse of the uterus or of the anterior or posterior wall of the vagina. There are numbers of conditions which may cause a projection from the vulvar orifice and should be kept in mind in determining the diagnosis. In a protrusion from the orifice of the vulva, then, we remember the possibility of prolapse of the uterus, prolapse of the vaginal wall, either anterior or posterior, the anterior being known as cystocele, the posterior as a rectocele. We may have a prolapse of the entire vagina, with the cervix protruding from its center, without prolapse of the uterus, a condition known as hypertrophic elongation of the cervix, the fundus retaining its normal position. The cervix is dragged upon by the heavy vaginal walls, which results in its elongation. We may have a protrusion from the vulva of polypoid growths from the uterus, which drag upon the organ until the growth protrudes from the vagina. We may have the protrusion of the fundus of an inverted uterus; so it is important in any condition to make careful examination to ascertain the character of the protrusion, and not take for granted, because there is a protrusion, that it is a prolapsus. Prolapsus of the uterus may arise from a variety of causes. The causes may be divided into three classes: Those which result from decreased support, as in laceration of the vagina or pelvic floor, which no longer affords the proper support for the structures above, and from which the intra-abdominal pressure, having nothing to resist it, drives out the contents of the passage, causing a hernia. Secondly, we may have prolapsus as a result of increased intra-abdominal pressure, the presence of a growth which fills the abdominal cavity or rests upon the uterus, thus pushing it out. In a patient with a large amount of fat, and the abdomen greatly distended, the intra-abdominal pressure is increased, which renders the orifices less resisting, and consequently favors the tendency of the contents to escape. Third, we may have the condition arise as a result of increased weight in the organ itself; thus from subinvolution of the uterus, or growths in its walls, as the presence of a fibroid tumor. The decreased support, the increased intra-abdominal pressure, and the increased weight of the organ may all be associated in the same individual. Taking the first cause into consideration, we can readily understand if we have a laceration of the pelvic floor which extends back to the sphincter ani, or to one side of the sphincter, tearing through the lavator-ani muscle, the vulva stands open, the anus is pulled back, there is a consequent want of support of the anterior segment of the pelvic floor, the constantly filling bladder without support sags, and the intra-abdominal pressure drives it and the uterus toward the vulvar orifice. A portion of the bladder becomes situated below the level of the internal orifice of the urethra. This portion of the sac is consequently emptied of urine with difficulty. Some of the urine will remain unevacuated. In this sac the accumulating urine and the mucus become decomposed, producing an ammoniacal odor, and an irritating fluid which causes a localized cystitis. The salts are deposited, and if there is a small plug of mucus it affords a nucleus upon which large calculi may form. The sagging of the anterior segment of the pelvic floor is recognized as a cystocele. As the anus is dragged backward, accumulation of fecal matter in the rectum causes it unsupported to sag until it rolls out, forming a sulcus below the level of the anus. If the patient is lying upon her back, with limbs separated, and is directed to strain, you will see the eversion of the anterior and posterior vaginal walls. If the tumor is confined to one wall you can readily determine between cystocele or rectocele by the introduction of the finger. In the former the finger passes behind, in the latter in front, of the protruding tumor. In this patient the finger en-

ters the vagina behind the protruding mass, and the cervix is situated just behind and at the base of the tumor. The finger can enter the vagina some distance behind the cervix. This indicates that this is not a case of true prolapsus, but one of hypertrophic elongation of the cervix, and that the elongation is at the expense of the anterior part of the cervix.

Procidentia is complete prolapsus, and this term is only applicable to those cases in which the entire uterus is outside the vulva. That in any mass the uterus is outside the vulva can be readily determined by placing the fingers of one hand in front of, and the other behind the tumor, and press them together until we find that the uterus is below. In a case of elongation of the cervix we will find a thin, attenuated cord passing upward, which is the elongated cervix. Generally in hypertrophic elongation of the cervix we find one or the other vaginal wall remaining partially or entirely undisturbed, while the protrusion involves the other. We may have complete inversion of the vagina and still find the cervix elongated.

In a diagram which I show you, you can see the protruding cervix and the inverted vagina, and a cul-de-sac formed in the bladder, and another in the rectum, and yet the fundus of the uterus is nearly in its normal situation. You can readily understand the distress and discomfort a patient must experience, with a protrusion of the vagina as it settles lower in the pelvis, from the sensation of weight and pressure. In the patient I have just shown you, we have an abrasion of the cervical mucous membrane. This abrasion extends upon the vaginal surfaces about it. In some cases there is complete destruction of the mucous membrane, leading to ulceration. Sometimes the mass itself becomes thickened and inflamed, so that its return is attended with difficulty and occasionally is impossible. A protrusion of this kind may result in secondary inflammation of the peritoneum, which causes adhesions of the prolapsed intestines, so that fixation becomes so definite and determined that it is impossible to reduce and return the uterus to its normal situation. The condition of such a patient is exceedingly uncomfortable.

Having a prolapse or procidentia, we now come to the consideration of the method of treatment. The condition was one recognized by the ancients, and is one of the earliest female diseases described. The earlier authors upon the subject were in the habit of regarding the uterus as a sentient body which could be frightened back in its normal situation by subjecting it to nauseous odors or bringing it in contact with disagreeable animals. They were in the habit of permitting toads and frogs to be placed in contact with the uterus, allowing lizards to crawl over it, subjecting it to fumigation with unpleasant odors, to drive it back to its normal place. Emmett records the fact that a gentleman from one of the Southern States was in the habit of treating such patients among colored women by placing them in a kind of sling in which the head and upper part of the body were lower than the pelvis, and she was kept in this position for three or four weeks, and her vagina filled with a decoction of white-oak bark, which produced such an astringent effect upon the mucous membrane and walls of the vagina as to contract them and retain the organ in place. In looking over the history of the condition, we find patients were operated upon in various ways, mainly for the purpose of rendering the organ unable to escape from the vulvar orifice: thus, one introduced alternate gold and silver rings, and another did a plastic operation upon the perineum, by which the vulvar orifice was narrowed. Another placed a number of forceps on the vaginal wall, which were left in place until they sloughed, and the cicatrization following these sloughs narrowed the canal. We find a very great difference of opinion as to what supports the uterus in its normal position. One believed it to rest upon the upper part of the vagina like a cork in a bottle. Another regarded the perineum as the grand keystone of the arch; others the ligaments of the uterus as the retaining power; others the peritoneum as the structure which retained it in its normal situation. The truth lies not in any one of these, but in all of them: the maintenance of the uterus in its proper position depends upon the peritoneum, the ligaments, the proper condition of the perineum, and the relation of the vagina to the surrounding tissues. If the vaginal walls are torn during labor from their attachment to the levator-ani muscles, and have lost their muscular tissue, they gradually sag until they become heavy; and even if the uterus is retained in its normal situation by the proper muscular tone of its ligaments, we will sooner or later find an elongation of the cervix result. If the ligaments have lost their muscular tone, the uterus itself will be dragged down, and finally result in procidentia. This displacement is increased by the intra-abdominal pressure, by efforts upon the part of the individual in straining, constipation, or if she is obliged to lift heavy weights; anything which increases the intra-abdominal pressure will sooner or later promote the expulsion or displacement of the organ. With this review of the causes which conspire to maintain the uterus in its position, we come to the consideration of the treatment of displacement.

It may be divided: (1) into the restoration of the uterus to its normal place, (2) its maintenance. It is quite one thing to replace the organ, another to maintain it after it has been replaced. With the patient upon her back we grasp the uterus between the finger and thumb, and push it upward, carrying it into the vagina in the axis of the pelvic curve until it is brought to its normal situation. It may be maintained by mechanical means or surgical measures. The former comprise the various pessaries, such as recommended by Hodge (modified by various men); retroversion pessaries, the posterior bar of which passes behind the uterus into the posterior cul-de-sac of the vagina, carrying it upward; and the double-curved pessary of Gehrung; the cradle pessary of Graily Hewitt; ring, glass or rubber ball, and glass or rubber disc pessary. All have been made use of for this purpose. It is necessary that these should be of sufficient size to distend the vagina and maintain it above the vulvar orifice. The difficulty of all pessaries is that the vagina is so prolapsed and the vulvar orifice so large that the instrument, together with the uterus, is soon pushed

through. Then, again, we have various pessaries with external support—a pessary ending in a cup or ring, with rubber band attached to it, by which it is held up and which the patient wears continuously. This keeps the organ in place. But all these pessaries, whether with external or internal support, are foreign bodies and produce more or less irritation of the mucous membrane, more or less discomfort, the patient being constantly aware of their presence: so it is desirable to resort to other measures to bring about the relief of the condition and avoid the necessity of continuing mechanical means. To attain these ends, operative surgery must be evoked. The parts are restored to their normal situation, and an effort is made to bring about a normal condition. The difficulty in the various plastic operations on the vagina, whether upon the anterior or posterior or both walls, is that they narrow the vagina at its lower portion, while there is a tendency to rolling out of the uterus and constant pressure upon the newly united tissues. This keeps up until a process of ulcerative absorption results, and the organ is driven through, when the last condition becomes worse than the first. The first consideration should be to decrease the weight of the uterus. This is done by amputation of the cervix; and second, a plastic operation upon the anterior wall of the vagina. This may be adapted to a particular condition, being a denudation of a triangular, circular, or oval area, according to the amount of and the direction in which the narrowing can best be made. An operation which is frequently effective is that of Stolz, which consists in making an oval denudation and introducing a purse-string suture, which, when tied, contracts the anterior vaginal wall in every direction. The plastic operation upon the anterior must be followed immediately, at the same sitting, by the restoration of the posterior segment of the pelvic floor. This may be done in the form of the Hegar operation, in which the triangular denudation is made high up in the posterior wall of the vagina, followed by the narrowing of the vulvar orifice, or a denudation may be made, as has been suggested by Martin; in dissecting up a column on either side of the posterior wall, the edges of each column are united by sutures, and then the vulvar orifice contracted by an operation upon the perineum. Lefort suggested an operation for prolapsus which consisted in making a vertical denudation, about three-fifths inch wide, upon each the anterior and posterior walls of the vagina, and bringing these surfaces in contact by sutures, so that the raw surfaces of the one lay directly in contact with that of the other. This was reinforced by an operation upon the perineum, narrowing the vulvar orifice, upon which this column rested. I had the good fortune to perform the first operation of this kind done in Philadelphia. It resulted in a cure of the prolapsus, which had existed for a number of years. The result of the operation is a septum, which divides the vagina into two canals, and consequently is one which is only applicable to those cases in which the probability of conception has passed. As you can readily understand, it would be exceedingly unfortunate for any individual to have such a condition complicated by a subsequent pregnancy, as the band of adhesion would be sufficiently firm to render the delivery of the patient exceedingly difficult, if not dangerous.

If the uterus is turned backward, so that the intra-abdominal pressure is directed upon its fundus or posterior surface, constantly driving it down upon the newly-united surfaces, the treatment will be incomplete unless measures are taken to bring the uterus forward. The Alexander operation, shortening the round ligaments, will be found to serve a useful purpose, as the organ is held forward, and consequently in a position in which the tendency to displacement is greatly decreased. In the patient I have had before you this morning, a woman sixty-three years of age, in enfeebled health, in whom operation would be attended with more or less shock, possibly in whom there would be danger in the administration of an anesthetic, it becomes a question whether any other procedure of less danger would afford relief. An operation has been recently devised which consists in passing beneath the vaginal mucous membrane a number of circular sutures, preferably wire or silk-worm gut, the first passed just below the cervix, introducing the needle beneath the vaginal wall, carrying it as far as can be reached, bringing it out, reintroducing it at the point of exit, and so on until the vagina is encircled, bringing it out at the point through which it was introduced: a second suture is introduced about half to three-fourths inch below this, and so on until the last suture is passed above the vulvar orifice. These sutures are then drawn comparatively tight and fastened, pushing them back through the opening, so each is a completely buried suture. The result is a narrowed canal, through which it will be impossible for subsequent displacements to occur, and yet sufficiently large to favor drainage. Under the influence of cocaine these sutures may be introduced without the administration of a general anesthetic.

CLINICAL MEMORANDA.

TOXIC ERYTHEMA.

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UNDER this designation I wish to call attention to a form of erythema occurring in the course of pus formation. It is most commonly encountered in young children. Its form is usually macular or punctate, though occasionally of the papular or vesicular variety, and its course mild and of short duration, accompanied by moderate rigors, with rise of temperature and subsequent desquamation. The eruption itself is of slight importance, except in those rare cases where the subjective sensations of burning and itching are distressing to the patient.

The common form of small discrete macules of faint pink color, appearing first upon the abdomen and sides of the chest, few in number and widely distributed, are seen in the milder forms of endocarditis and empyema, tubercular abscesses, etc. In some cases of abscess of

the middle ear or of mastoid this form is seen, but usually attendant upon these conditions we find the macular eruption rapidly changing to a papular, and in the severer cases to a vesicular form, with rigors of moderate severity, headache and backache at the beginning, followed by rise of temperature. These symptoms may follow an infected wound, accidental or intentional (as in vaccination), where there is rapid formation of pus and absorption of the toxic products of the same.

The following cases will illustrate a few of the features noted above:

CASE I.—Male, aged 18 months. Had suffered from empyema. Chest had been drained, child improved, and drainage tube removed, the wound being allowed to heal. Rigors and rise of temperature developed one week after the tube was removed, followed next morning by a macular erythema over a greater part of the body. The chest was again drained, the fever subsiding and erythema disappearing the next day.

CASE II.—Male, aged 6 years. Suffering from tubercular abscess of hip-joint. The abscess had been opened, but owing to carelessness of the nurse had later not received proper attention, and was partially closed. A diffuse erythema developed, which rapidly disappeared after the abscess had been thoroughly cleansed.

CASE III.—Female, age 13 years. A punctate eruption appeared twelve hours after a rather severe headache and pain in the back; temperature rose to 102° F. The rash was located on face and chest, and later extended to the abdomen and extremities, at first macular, rapidly (within twelve hours) becoming papular in character, vesicular in places. The diagnosis of measles had been made before the writer saw the case. Improvement was followed by three exacerbations in ten days, when pus discharging through the outer ear disclosed an abscess of the middle ear. Treatment was instituted for this, and resulted in the prompt healing of the abscess and the complete disappearance of the erythema in two days; desquamation slight.

Dr. G. H. Fox (MED. NEWS, January 4, 1896) reports the following case:

Male, age 2 years. Eruption appeared one week after vaccination; became generalized after twelve hours. There was considerable redness and swelling around the pustule, but no signs of injury or external irritation. Eruption began to fade on the third day.

In all except the last of these cases the absorption of some toxic product of the existing inflammation was evidently the main etiological factor, since removal of the pus resulted in the disappearance of the eruption, no local application or other treatment of the eruption having been employed. In the last case both local treatment and a laxative were employed.

Dr. Fox touches lightly upon the etiology in his report, from which I quote as follows:

"These eruptions (*seen after vaccination*) may depend upon some abnormal condition of the patient, in which case the vaccination cannot be regarded as the prime cause of the rash, inasmuch as it merely evokes an eruption which was already latent, and might have appeared spontaneously, or from any one of a variety of causes."

This I consider a misleading use of the word *latent*, inasmuch as many diseases, eczema for instance, may be due to a variety of causes; yet it behooves the physician to seek the exciting cause in each separate case.

Again: "Frequently, however, the vaccinated subject is in normal health, and the vaccinal eruption, like a drug rash, can only be attributed to idiosyncrasy."

The symptoms noted—headache, malaise, febrile reaction, etc.—indicate that these cases should come under that class designated "erythema scarlatiniform." The phenomena are due to the action of some poison on the nervous system, frequently, as in these cases, the toxins produced at the foci of suppuration. The erythema is only a part of the general process, representing the action of these toxins on the vaso-motor centres. As in all diseases due to such causes, the intensity of the reaction depends to a certain extent upon the normal resisting power of the tissues or organs affected. To this extent we may ascribe its occurrence to idiosyncrasy. In other words, we may regard the toxin absorption as the prime or exciting cause of the rash, the lowered state of health, and consequent subnormal tone of the nervous system as secondary or contributing etiological factors.

A consideration of this class of cases and their etiology is presented, not so much on account of the skin and nervous phenomena as to call attention to a condition which may frequently lead to the diagnosis of an unsuspected pus foci.

32 WESTINGHOUSE BUILDING.

SARCOMA OF THE LARYNX—FINAL REPORT OF A CASE.

BY JOHN A. THOMPSON, M.D.,
OF CINCINNATI, OHIO.

IN the MEDICAL NEWS for October 24, 1895, I reported a case of sarcoma of the larynx, operated upon by a method radically different from that usually followed in laryngectomy. In the interest of truthful medical statistics, I wish briefly to report the further history of the case. At the time the article was written the patient had resumed work and was gaining rapidly in weight and strength. A little later he had a small abscess in the neck which discharged spontaneously through the opening where the tracheotomy tube was worn. After the inflammation and thickening had subsided, no trace of any neoplasm could be found in the tissues of the neck.

Early in November a second abscess developed near the median line, and this abscess was accompanied by a very rapid growth of a sarcomatous tumor in the connective tissue of the neck. The point of origin was at the level of the upper border of the thyroid cartilage on the right side, where the original growth had protruded above the larynx. The growth of this tumor was exceedingly rapid, and attended by a great deal of pain.

As no metastatic growths could at this time be located anywhere else in the body, a second operation was done November 15th. Drs. Oliver and Castle were present and

assisted at the operation. The patient was anesthetized by chloroform inhaled from a bit of gauze held over the opening of the tracheotomy tube. This simple method was more satisfactory than any of the more complicated appliances used for this purpose. The growth removed from the neck was about three inches in length, two inches in width, and one and a half inches in thickness. As all the usual landmarks except the anterior border of the sterno-cleido-mastoid had been destroyed at the previous operation, the dissection was necessarily tedious and difficult. The growth had apparently pushed the tissues before it so that only two important structures were involved. The facial artery and descendens noni nerve had to be cut in the removal of portions of the growth. After the large mass of the tumor was removed, it was found that the chain of lymphatic glands lying beneath it had become involved. The highest gland was three-fourths of an inch in diameter. The glands immediately below it were smaller; but after following down the chain until we had reached the sterno-clavicular junction without being able to remove all of the involved structures, the operation was completed with the knowledge that secondary developments in the lungs or mediastinum would soon follow. The growth was suppurating at the time of the operation. The amount of tissue removed from the neck was so extensive that it was impossible to entirely close the wound. Skin-flaps were formed so as to close as much of the wound as possible, and the remaining portion was packed with iodoform gauze.

The patient rallied rapidly after the operation. The wound healed with very little suppuration, and the patient was able to leave the hospital on the seventeenth day.

There was again a temporary improvement in his general condition, but this was soon followed by symptoms indicative of rapid growth of sarcoma in the lung. The patient began coughing up small masses of clotted blood which would obstruct the tracheotomy tube and require its rapid removal to prevent suffocation. He broke the tube in an attempt to remove it on the street one day while within two squares of my office, and came near suffocating before he reached the office and measures of relief could be instituted. December 17th he had a hemorrhage of bright arterial blood from the lung, and ever after that time suffered greatly from dyspnea. Masses of clotted blood were continually being coughed up, requiring immediate attention to the tube to prevent strangulation. The hemorrhages recurred at intervals of a few hours, in varying severity, and were attended by ever-increasing dyspnea. Physical examination showed a large mass in the left lung, and smaller nodules scattered elsewhere throughout both lungs. The patient finally died from apnea on the morning of December 21st.

The patient had acquired the art of talking by motion of the lips and cheeks so that he could readily carry on a conversation with those associated with him.

After the closure of the wound, made at the time of the laryngectomy, there was never any difficulty in swallowing. The patient ate all the ordinary foods with as much ease as before the beginning of the malignant growth.

MEDICAL PROGRESS.

Nasal Tuberculoma.—At a meeting of the Hungarian Society of Otologists and Laryngologists, Polyak (*Revue de Laryng., d'Otol., et de Rhinol.*, 1896, No. 4, p. 115) reported the case of a woman, 49 years old, who consulted him for an affection of the right nostril, with hemorrhage and gradual obstruction commencing six months before; later the left had become implicated.

The right nostril was completely filled by an irregular tumor, bleeding easily and resembling granulations. In the left, on the anterior part of septum, there was a tissue partly covered with dry crusts, of a dirty white color, of the size of a dollar, flattened, here and there granular, projecting but slightly, and bleeding easily. The tumor of the right nostril was immediately extirpated by means of the hot snare, and it was found that the neoplasm had its base on the right part of the septum corresponding to the lesions described on the left. Hemorrhage was slight.

The tumor consisted of fine reticular connective tissue, with fairly thick fibrous layers, and a few greatly dilated blood-vessels, but altogether it was but slightly vascular. Between the fibres there were numerous tubercles, presenting in the center traces of beginning necrosis. The cells were badly colored, and indistinct, the nuclei small, shriveled, and decomposed. The tubercles contained some very characteristic giant cells of Laughan.

The surrounding tissue was infiltrated with round and migratory cells, and a small number of tubercle bacilli were found, usually appearing in the giant cells.

This was therefore an undoubted case of tuberculosis of the nasal septum. There were no signs of tuberculosis in the lungs or elsewhere. The patient was well-nourished, without the slightest sign of cachexia, and was only troubled by this affection.

This disease presents itself in two forms: as granular ulcers, and the rare form with formation of a tumor, like the case above related. It seems that the disease attacks women especially, has a strong tendency to recurrence, but seldom leads to general tuberculosis.

In the discussion following, Irsai pointed out the importance of not confounding tuberculosis with lupus. The bacillus is identical in both affections, but the clinical symptoms are very different. In pure tuberculom, tuberculosis may also be found elsewhere; and although a tuberculoma may heal spontaneously, recurrences are very frequent, and therefore it is important to destroy all the morbid products, with lactic acid, after complete extirpation of the diseased parts.

Krepuska recalls two cases in which the nose and the ear were similarly affected at the same time. The tissue extracted from the cavity of the middle ear showed in both cases giant cells and tubercle bacilli.

V. Navratil said that secondary tuberculomata are much more frequent and are often taken for syphilomata, just as tubercular ulcers of the mouth and of the pharynx are often considered syphilitic.

Polyak concluded by saying that the facts recited show clearly the importance of a histological examination, because a simple microscopical examination of the exu-

date or of shreds is rarely sufficient, while the histological examination will determine at once if it be a neoplasm, tuberculoma, or simply a bleeding polypus. A test by bacterial cultures also might be tried, but is seldom necessary.

Albuminuria in the Sequence of Vaccination.—To determine the frequency with which vaccination is attended with the presence of albumin in the urine, PEIPER and SCHNAASE (*Berliner klinische Wochenschrift*, 1896, No. 4, p. 76) make a series of observations upon 122 infants successfully vaccinated for the first time; upon 54 children successfully revaccinated, and upon 127 military recruits. The examinations were made before the vaccination and on the first, third, seventh, and tenth days afterward. In cases in which albumin was found, subsequent examinations also were made. Of the 122 children vaccinated for the first time albuminuria was found in 7, or 5.73 per cent.; 474 examinations were made with positive results in 9, or 1.89 per cent. In none did nephritis develop. Of the 54 cases of revaccination albuminuria was found in 10, or 16.6 per cent., and among the recruits 10.63 per cent.

Ureteral Implantation into the Rectum.—KRYNSKI (*Centralblatt für Chirurgie*, 1896, No. 4, p. 73) points out that the most serious objection to implantation of the ureters into the rectum is the danger of infection of the kidneys by the contents of the bowel. To obviate this danger in cases of ectopia of the bladder, an elliptical section of the bladder-wall, including the opening of the ureters, may be removed and sutured into the wall of the rectum. If, however, the extremity of a divided ureter is to be implanted into the rectum it is recommended that upon the antero-internal aspect of the rectum, just below the sigmoid flexure, two incisions through the serous and muscular layers be made at an acute angle, the one 1 cm. long, and corresponding to the transverse axis of the bowel, the other from 2½ to 3 cm. long and directed obliquely downward and outward. The serosa and muscularis included between these incisions is dissected away, and at some distance from the angle of the wound an opening is made through the mucosa. Into this opening is introduced the obliquely divided extremity of the ureter, and the mucous membrane of the two is sutured the one to the other. The extremity of the ureter is covered with the dissected portions of serosa and muscularis, which are sutured into their original situation. Additional sutures unite the ureter and the bowel.

The Immunizing Power of the Blood Serum of Vaccinated Heifers.—As the result of an experimental investigation into the immunity conferred by vaccination and by inoculation with the blood-serum of vaccinated heifers BÉCLERE, CHAMBON and MÉNARD (*Annales de l'Institut Pasteur*, 1896, No. 1, p. 1) have reached the following conclusions: The serum of vaccinated heifers obtained at the height of the vaccinal process, that is, from ten to fifteen days after vaccination, possesses immunizing properties against vaccinal inoculation. This action is apparent early, a subcutaneous injection of a sufficient quantity of such serum immediately before vaccination by a number of subepidermic inoculations modifying profoundly or even aborting the subsequent vaccinal eruption. On the other hand the immunity consecutive to subcutaneous vaccination appears late, an injection beneath the skin of vaccinal lymph immediately or even a day or two or three days in advance of subepidermic inoculation with the same lymph in nowise modifying the appearance of the subsequent eruption. The rapidity of action of the serum of vaccinated heifers would seem to show that the immunizing properties are due to the presence of soluble substances rather than to that of micro-organisms. The immunity consecutive to subcutaneous inoculation with vaccine-lymph is developed slowly and gradually, not being complete before the eighth day, when it is sufficient to neutralize subepidermic inoculation with vaccine-lymph. The serum of vaccinated heifers injected beneath the skin of animals of the same species inoculated immediately afterward manifests its immunizing power in accordance with the dose injected, the minimal dose being relatively considerable. The immunity conferred by a dose of $\frac{1}{100}$ of the body-weight of an animal, inoculated immediately afterward, is incomplete but sufficient for practical purposes. The immunizing action of the serum of vaccinated heifers is apparent even when the subcutaneous injection does not procede but follows vaccination at an interval of 24 or 48 hours. The immunizing power of the serum of vaccinated heifers does not appear to be increased by injecting for two days previously vaccinal virus beneath the skin of the animal furnishing the serum.

THERAPEUTIC NOTES.

The Treatment of Erysipelas with Applications of Vaselin.—KOSTER (*Semaine médicale*, 1896, No. 9) has made a comparative study of the results of treatment in a large number of cases of erysipelas, in which various methods were employed, including painting with tincture of iodine, spraying with mercuric chloride, and applications of ichthyol and of simple vaselin, and found that the results with the last were quite as good as those with any other measure, as regards mortality, complications, and extension. The applications of vaselin were made twice daily and covered by gauze with a certain amount of compression.

Treatment of Hiccough by Traction of the Tongue.—At a recent meeting of the Société de Biologie, LABORDE (*Compt. Rend. Hebt. d. Séances de la Soc. de Biol.*, 1896, No. 5, p. 135) read, in the name of LÉPINE, a communication detailing the history of a young girl who had suffered for four days uninterruptedly from obstinate hiccough, which resisted all ordinary treatment. It was observed that when the child upon request extruded its tongue the hiccough ceased. Acting upon this observation the tongue was firmly withdrawn from the mouth for several minutes and upon its return it was found that the hiccough had ceased. Laborde referred also to two classes of similar character previously reported by Viaud.

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SATURDAY, MARCH 28, 1896.

AMATEUR SURGERY.

AT a recent meeting of the New York Academy of Medicine Dr. Robert Abbe, in discussing a paper on "Cancer of the Larynx," made use of the term "amateur surgery" in the following connection: "It is easy to remove a cancer of the tongue; it is almost impossible to prevent its recurrence. The study of the lymph channels and removal of all infected glands in a case of this character has given the subject a new impetus, and while it places a cure within the range of possibility, it at the same time removes the operation from the field of *amateur surgery*."

Although the significance of the expression would seem to be quite clear in this connection, he was taken seriously to task by a correspondent in the *Medical Record*. This criticism, however, gave Dr. Abbe the opportunity to make his meaning quite clear, and he has done so, in no uncertain way, in the last issue of the same journal.

The position is so well taken and the remarks are so timely that they are worthy of repetition: "I believe there is a considerable amount of grave surgery done to-day by practitioners whose temerity is stimulated by inflated statistics of small mortality under modern surgical practice, and whose feeling that they would like to do serious surgery is entirely unjustified by their training. Such novices in the larger field of work are rightly called amateurs. No man of mediocre talent or training should attempt operations involving grave risk to human life and obviously beyond his depth. He should confine himself within minor surgical limits."

Such limitation does not debar the young practitioner from his proper field of experience, nor does it close one's eyes to the fact that every one must have his first case in every field of surgery upon which he may enter. But the justification for this first essay must be found in proper preliminary training and a due sense of the sacredness of human life and the responsibility of the operator.

THE OPTICAL SOCIETY BILL.

A BILL is now before the New York State Legislature, whose purpose is to incorporate the "Optical Society of the State of New York for the purpose of improving and regulating the practice of Dispensing and Refracting Opticians." There is no doubt that the practice therein specified sorely needs improving and regulating, and should be brought under careful supervision. But the provisions of this bill have evidently not been considered with the care that the importance of the subject demands. In the first place, it delegates to untrained and unskilled hands a field of work that belongs to the medical profession. Nothing in ophthalmic practice is better established than the fact that eye symptoms are simply one manifestation of remote nervous, or constitutional causes, about which "dispensing and refracting opticians" have not the slightest conception, and yet, under this bill, they may legally assume the right to adapt glasses for the relief of headache, neuralgia, chorea, epilepsy, or any other of the many ills of life.

The bill incorporates a body without naming the incorporators. They may be jewelers' clerks or tinkers, opticians, or blacksmiths; as a matter of fact, one of them is reported not to be an American citizen. Moreover, all opticians, jewelers, or clerks, that are now fitting glasses or exe-

cuting prescriptions for lenses can secure certificates by simply making application and paying five dollars. But after ninety days from the passage of the bill no optician in the State, who is not a member of this society, can execute ophthalmic prescriptions for lenses or adapt glasses for the sight.

An attempt is made in the bill to restrict membership in the society by a system of examinations. But the requirements are not mentioned nor any method outlined by which they can be determined. The apparent supervision of the Board of Regents is nugatory, for they are compelled to select three out of the six men nominated for examiners by the secretary of the society.

The medical profession of the State should certainly make a determined effort to modify or suppress this bill.

BACTERIOLOGY.

THE EXISTENCE OF SPECIFIC CURATIVE SUBSTANCES IN THE BLOOD-SERUM OF TYPHOID AND CHOLERA CONVALESCENTS.

Recent studies, by Pfeiffer and Kolle, upon the specific immunizing substances developed in the blood, by an attack of typhoid fever or cholera, are of great interest, since they indicate that in these diseases nature limits disease not through the development of antitoxins, as in diphtheria and tetanus, but through the development of specific bactericidal substances. They found this opinion upon the results obtained from a long series of careful experiments.

Thus they found that if a moderate-sized platinum loopful of a virulent typhoid culture of twenty hours' growth is mixed with a cubic centimetre of sterile salt solution or bouillon, and injected into the peritoneal cavity of a young guinea-pig (300 grs.), the bacilli will be found to rapidly increase in numbers, and in the peritoneal cavity a bloody exudate will be thrown out if the disease is rapidly fatal, or a more purulent one if the disease is less acute.

Death takes place, according to the virulence of the culture and the number of bacteria injected, in from six hours to several days. In the more acute cases the bacilli continue to increase in numbers until death, while in the more chronic ones, after increasing for a number of hours, they cease to develop and gradually diminish. In either case death is due, according to Pfeiffer, to the poisons produced by the breaking up of the bacterial bodies and not to poisons excreted by them while living.

If now other animals are injected with the same quantities of bacilli, to which normal human blood serum is added in small and large amounts, it will be found that those receiving the culture, with the addition of small quantities of serum, die as those receiving no serum, while those receiving large amounts of serum are protected. Normal blood serum having, as is well known, feeble bactericidal properties. Finally, instead of normal serum, much smaller amounts of serum from those recently convalescent from typhoid fever were added to the same quantities of virulent bacilli as in the former experiments and similarly injected.

The behavior of the bacteria in the peritoneal cavity was in these very interesting. Thus, if tiny quantities of the peritoneal contents were taken after the injection of the mixture of the serum of convalescent patients and typhoid bacilli, it was found that almost immediately the bacilli began to lose their motility, and within fifteen to twenty minutes many of them showed signs of beginning degeneration. The total destruction of the bacilli soon followed.

The quick death of the bacilli was also shown by making cultures every few minutes from the peritoneal contents. Thus one loop of peritoneal fluid, removed thirty minutes after the injection, contained between four and five thousand living bacilli. The same amount thirty minutes later but five hundred, and three hours later but twenty. When sufficient serum is used all the bacilli died as a rule within sixty minutes. If the animals were killed no living typhoid bacilli were found in peritoneum, blood, or organs. If the amount of serum is too small after the bacilli have diminished somewhat in number they will again increase, and this increase will continue until the death of the animal.

This serum, which possessed such marked bactericidal effect upon the typhoid bacilli when in-

jected into the peritoneal cavity with the bacilli, was found in the test tubes to possess very feeble bactericidal power, and, indeed, by heating it to 60° C., it could be robbed of its bactericidal power in the test tube completely without diminishing to any appreciable extent its power when injected into the body.

The specific nature of this substance was shown in that, while acting so powerfully on the typhoid bacilli, it was without action on other bacilli closely allied to it biologically. The serum has in the future, therefore, a probable use for diagnostic purposes. The experiments with the serum of animals, immunized to the typhoid bacilli, gave similar results to those obtained from the serum of convalescent patients. With cholera the results obtained were almost identical.

From their experiments they conclude that the serum of typhoid and cholera patients contain substances which have a bactericidal and solvent effect in the body upon the bacteria of these diseases. These substances do not exert their effect outside of the body, where they are in an inactive state.

An antitoxin is not present in the serum. Normal human serum possesses feeble general bactericidal properties, which affect typhoid and cholera as all other bacteria, and is in no way specific. The serum from typhoid and cholera convalescents is not only in its bactericidal power from twenty to one hundred times stronger than normal serum, but is also specific, typhoid serum being bactericidal only to typhoid bacilli, and cholera serum to cholera spirilla.

This specific bactericidal substance in the blood of typhoid and cholera convalescents and immunized animals, is an added argument for the specific nature of these bacilli. The bactericidal substance in the serum of animals treated by increasing doses of the living virulent typhoid bacilli or cholera spirilla has not yet been obtained in sufficient concentration to make its use in the treatment of human disease seem advisable.

The results above summarized are of great importance if true, and they seem to be founded on very careful and repeated experiments. They indicate that we can only hope to find antitoxins, such as have been discovered in diphtheria and tetanus, in a few diseases. In the majority we must seek in other directions to find the means of prevention and cure substances. To a certain extent this is discouraging.

Their results also teach us to be cautious in using the various so-called antitoxins now put on the market for the treatment of almost all diseases due to bacteria. The majority of these substances certainly have none of the properties to which they lay claim.

William Hallock Park, M.D.

ECHOES AND NEWS.

Mr. George S. Davis, the publisher of the *Index Medicus*, has been elected a foreign member of the Hygienic Society of Paris, in recognition of his services to medical literature.

On March 21st, Governor Morton, of New York, signed Senator Nussbaum's bill, which raises the medical students' course from three to four years, but allows students who have entered colleges to be graduated under the rules in force when they matriculated.

The author of the statement that "Of the 3000 physicians in New York, only 600 are native Americans," should produce substantial evidence of its truth, or else correct a palpable error that is being widely quoted.

Toole's Theatre in London is to be torn down to make room for an addition to Charing Cross Hospital.

It is reported that Prof. W. O. Atwater, of Middletown, Conn., has recently conducted a series of valuable physiological experiments relative to the value of foods by placing his colleague, Dr. Tower, in an airtight chamber for a week at a time. It is said that thoroughly scientific methods have been employed in these investigations, and the results will therefore be regarded important.

On the 18th instant President Cleveland placed his official signature to the finding of the court-martial sentencing Medical Inspector Edward Kershner to dismissal from the U. S. Navy for violation of naval regulations.

It is reported from London that a bacteriologist named Czajikowski has discovered in the blood of patients suffering from measles a bacillus which is regarded as the probable cause of the disease.

The repetitions by numerous observers of experiments, first instituted by the Medical News, to determine the influence, if any, exercised by the X-rays upon germ life have invariably confirmed the negative results published in the issue of February 22d last.

Apropos of the wonderful penetrating powers of the cathode ray, a young lady, at a recent dinner party in New York, ventured the remark that she understood that these new cathartic rays could go through anything.

TWO Chinese M.D.'s of New York City, Dr. Jin Fuey Moy and Dr. Lee Foy Quong, declare that Long Tong is not suffering from leprosy, and have been making an effort to have him released from the leper colony on North Brothers Island. Their opinion, however, has not been confirmed by the experts that were sent to examine him, and Long Tong will be obliged to stay were he is.

THE 5-year-old son of a doctor in Monte Vista, Col., played doctor with his 2-year-old sister one day last week. He imitated the things he had seen his father do, and took a phial from a shelf and forced his sister to swallow its contents. The bottle contained morphine and the little patient died from its effects.

ELEVEN nurses composed the class which graduated March 16th from the New York Hospital Training School.

DURING the week ending at noon March 21st there were 31 deaths due to violence reported to the Registrar of Vital Statistics for New York City. The total number of deaths from all causes for the same week was 850.

THE female doctors of Chicago have organized The Medical Woman's Club, which held its first regular meeting last week.

DR. ANTONIO LAGORIO, founder and conductor of the Chicago Pasteur Institute, has been decorated by King Humbert with the cross of Chevalier of the Order of the Crown of Italy.

THE medical examining board of Ohio recently appointed by the Governor in compliance with the requirements of the new law regulating the practice of medicine, consists of three regular, one homeopathic, two eclectic, and one physio-medic practitioners. Dr. Charles A. L. Reed, of Cincinnati, has been appointed one of the representatives of the regular school upon this Board.

THE CHICAGO ACADEMY OF MEDICINE dined at the Leland Hotel, March 13, 1896. The chief feature following was a paper by Dr. Harriet G. B. Alexander, on "Training and Environments as Corrections of Degeneracy."

AN ordinance was passed by the Chicago Municipal Board March 9th, known as the ambulance ordinance. It contains a provision that every physician having a permit and displaying a badge, to be procured from the city clerk, shall have the right of way for himself and his vehicle in the streets as against all processions, persons, vehicles, or animals, when answering professional calls.

THE southwest wing of St. Luke's Hospital, 112th Street and Cathedral Heights, called the Norrie Pavilion, in honor of Gordon Norrie, treasurer of the hospital, was opened for patients last week. The pavilion contains 150 beds, and will be devoted exclusively to the male wards. It is six stories high. It is the third of the group of six buildings which will comprise the entire institution when completed.

MR. EDISON reports his discovery that crystals of calcium tungstate, spread upon white paper, fluoresce in the X-rays six times as strongly as do the films made with platinum barium cyanide first suggested for this purpose. He has been able to see moving objects through eight inches of wood. Mr. Edison further states that this fluorescence is also obtained with thin plates of mineral fluorite (a combination of fluorene and calcium), and after a short exposure to sufficiently powerful rays the plate retains the fluorescent picture for sometime.

SKIAGRAPHY continues to extend its practical application in surgery. On March 16th a piece of glass was located in a patient's hand in Waterbury, Conn., and successfully removed; two pieces of glass have been accurately located and later removed by incision from Sandow's right foot; on the 21st, a gunner, who was wounded while firing a salute on Washington's birthday, at West Point, and was still suffering so great pain in his arm and wrist that it was feared by the surgeons that amputation would be required on account of probable crushing of the bones, was gratified to learn that the skiagraph showed his bones intact. We would suggest that the X-ray be turned on Edward Krager, of West Orange, N. J., who swallowed his rubber plate of eight false teeth on the 18th instant. The teeth have not yet been located.

THE members of the Long Beach Life Saving Station are suffering with what was pronounced by many of the old seamen to be ship's fever, said to have been contracted from the crew of the schooner Mary E. Walker, which went ashore on Long Beach about ten days ago. The disease has spread among the people at East Rockaway, L. I., and adjacent villages. All fears have been allayed by the quarantine officer, who pronounced the disease an aggravated form of itch.

MEN of great longevity in the medical profession are pronouncedly in evidence of late. First Pennsylvania presented her oldest practitioner, Missouri followed, and then California. Now Michigan claims the oldest practicing physician in the person of Dr. William Sprague, of Coldwater. He is 99 years old, and has practiced in that town more than fifty years. But news comes from Glamorgan, Wales, that Dr. William Salmon, of that place, entered on his one hundred and seventh year Monday last. He is still in excellent health, though he has not driven out of doors since his hundredth year, and stopped smoking as a regular thing when he was 90, though now and then he has a cigarette and drinks port more freely than he used to do. He derives deep pleasure from the faith that he is the oldest Justice of the Peace, the oldest physician, and the oldest Freemason in the world, and Gladstone, who is young enough to be his son, sends him a birthday telegram each year, with sincere wishes for here and hereafter.

WHILE New York City may point with pride to her almost unparalleled hospitals, the magnificent appointments and facilities of which have not only aided the indigent sick but have attracted the wealthy as well, it is a

notable fact that no provision beyond the wards of the pest-house has been made for those so unfortunate as to contract certain contagious diseases. The evident demands of the situation have recently attracted the attention of the charitable ladies of the city, prominent among whom should be mentioned Mrs. John W. Minturn. One hundred thousand dollars was considered to be necessary for the proposed hospital, and Mrs. Minturn, herself giving twenty-five thousand, has been able to get nearly the requisite sum. Twenty thousand dollars is still needed for furnishing the hospital throughout, and it is hoped that donations for this purpose will come. It is hoped that a few of the rooms may be endowed, so that they may be occupied free of charge by those whose means would be overtaxed by the regular payment, and whom it would be absolutely cruel to send to the public wards of the Willard Parker. To endow a room requires $6000. The site selected for the building is on the public land on Sixteenth street, near Avenue C, which has every advantage of isolation, and, fronting on the broad East River, receives pure fresh air from the water. Not only will it be as germproof and fireproof as modern science can make it, but every precaution for preserving the health of the servants, officers, and those in any way connected with it will be taken.

For several weeks, what would have been an amusing controversy had it not seriously involved the welfare of members of the most unfortunate class of humanity—the mentally diseased—has been in daily evidence between the New York State Commission in Lunacy and the Commissioners of Charities of New York City. A provision for the admission of any patient to the State hospitals is that he shall be dressed in a new suit of clothes; and a failure on the part of the City Charities to provide this for those patients transferred from Bellevue has been met by a refusal to receive them on Ward's Island. After resorts to various strategies by both parties, during which, in one instance, a lunatic was allowed to escape, a truce has now been effected, pending the decision of the State courts.

Dr. Jose Manuel Delgado, a citizen of the United States residing in Cuba, has been severely wounded by the Spanish troops under General Melquiz. Although he protested that both he and his father were American citizens, the employees on the Delgado plantation to the number of eight were killed, and Dr. Delgado was bound, shot, and left by the Spaniards for dead. The matter has been placed in the hands of the U. S. Consul-general at Havana, to which place Dr. Delgado has been transported upon a stretcher.

CORRESPONDENCE.

THE TOXIC PROPERTIES OF PIPERAZINE.

To the Editor of The Medical News:

Concerning the Clinical Memorandum "Toxic Symptoms Produced by Piperazine," in the current number of the Medical News, it may be of interest to your readers to call attention to the fact that in the *Therapeutic Gazette* for January, 1893, and February, 1894, in a study of the effects of piperazine on the urine, I speak of certain untoward effects observed by myself in using large doses of the drug. In one case, to ascertain the limit of tolerance and the effects of very large doses on certain of the urinary ingredients, I gave to a woman of 150 pounds, on thirteen consecutive days, 670 grains. This dosage was given as follows: In one period of four consecutive days 70 grains were given daily in three doses. This had been preceded by 20 grains the first day, 40 grains the second, and 60 grains the third, each in three doses. The 70-grain doses were followed by 25 grains daily for two days, and these in turn again by 70 grains daily for three more days. In this case scarcely any untoward effects occurred at this time; but with a different make of piperazine untoward effects of decided nature occurred the day succeeding the one on which three doses of 23 grains each (approximately 70 grains in all) were given. This maximum dose of the new preparation had been preceded by the use of 25 grains daily for a few days.

In a second case, an adult male, weight 130 pounds, in more feeble health, toxic symptoms succeeded 70 grains daily for two days, preceded by 30 grains in three doses the first day. The toxic symptoms were of the nature of nervousness and dread, succeeded by hallucinations, coarse tremors, and these by muscular weakness in-coordination and intermittent clonic spasm. In one of these cases a stupid condition occurred, of several days' duration. In the other an attack of acute mania, lasting several days, followed the other symptoms mentioned.

I have used piperazine a great deal—perhaps more than any one in this country—and have never observed toxic symptoms of any sort from a moderate dose, as of a half-drachm daily, although the drug has been continued for long periods of time. The limit of tolerance seems to be about a drachm daily. I have never had untoward effects to occur from a single dose of 20 grains, although I have not infrequently administered it, not, however, as an initial dose. I found, in my experiments, that the two different makes of basic piperazine on the market (neither of which, by the way, is Merck's) differed from each other quite markedly in degree of toxicity. Both makes were used in my cases. This difference was ascertained to be due to a matter of concentration of the drug in the more toxic, *i.e.*, to a much smaller amount of water of crystallization. It is on account of this that a stable salt of piperazine is preferable for administration to the basic piperazine still so much used.

Very truly yours,

D. D. Stewart, M.D.

108 South 17th Street, Philadelphia.
March 17, 1896.

GONORRHŒA OF THE RECTUM.

To the Editor of The Medical News.

Dear Sir: In your issue of March 7th I notice a very interesting clinical report by Dr. J. A. Murray, of Clearfield, Pa., on rectal gonorrhœa. On the same subject in the Feb. 20th number of the *Deutsche med. Wochenschrift* is an article by Dr. Theodore Barr, assistant on the Dermatological Division of the City Hospital at Frankfort-on-Main. He gives some startling figures as

to the frequency of the disease when carefully sought for. He says that from June 15, 1895, to Jan. 1, 1896, of 191 female patients with gonorrhœa, 67, or 35.1 per cent., of all the cases had also gonorrhœa of the rectum, as was established by microscopical examination. He thinks that the supposed rarity of the disease is owing to the fact that few cases give rise to symptoms pointing to the rectum. Few have bloody or purulent discharge from the rectum, and few have pain or tenesmus. Where these symptoms are present he thinks them due to excoriations and ulcerations at the anus.

His conclusions as to the causation are also interesting, in view of the case reported by Dr. Murray. Dr. Barr thinks that the cause is almost always found in a cervical or vaginal gonorrhœa, the secretions from which are carried into the rectum by the syringe nozzle, the thermometer, or other manipulation about the anus by patients of not too cleanly habits. One of his cases developed a periproctitis as a complication, which afterward formed a fistula, in the discharge of which the gonococci were demonstrated. My attention was called to this by the two articles happening to arrive on the same day; and also by the strikingly different conclusions as to the frequency of this disease.

Yours respectfully,

Wallace Johnson.

Washington, D. C.,
March 9, 1896.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, March 5, 1896.

Joseph D. Bryant, M.D., President.

PNEUMONIA AS A COMPLICATION OF DIPHTHERIA IN CHILDREN.

Dr. Henry W. Berg read a paper with this title. He said that the very large number of deaths from pneumonia complicating diphtheria, in the Willard Parker Hospital, had detracted from the brilliant results of the antitoxin treatment. The records of this hospital seemed to show that the antitoxin treatment had enabled even severe cases of diphtheria to survive for a longer time than formerly after the development of a pneumonia. This grave complication was liable to appear at any time while the Loeffler bacilli were still present in the throat. The pneumonia was either the result of a direct extension of the disease by continuity into the lung, or was due to mixed infection. In the latter variety, the streptococcus played a prominent part. While broncho-pneumonia was by far the most frequent form of lung complication in cases of diphtheria, there might be a lobar pneumonia, or a gangrene of the lung, or simply a pulmonary congestion. Gangrene of the lung was apt to result from the formation of the large pulmonary infarctions seen in connection with diphtheria. As regards the symptomatology, it should be recalled that diphtheria of the larynx often runs its course without marked fever, and hence that a sudden and decided pyrexia was probably indicative of a complicating pneumonia. If, in addition to this, the respirations became very rapid, and there were fine crepitant râles to be heard on deep inspiration, or when the child cried, it might be confidently assumed that pneumonia was present. The sudden fever and rapid respiration alone would furnish a good reason for making a diagnosis of pneumonia, even before the physical signs of pneumonic consolidation were distinct. This was an important point, for when there is disseminated pneumonia, or the pneumonic process starts in the deep portions of the lung, the physical signs are often at first uncertain. By frequent and careful physical examinations one could usually determine if the pneumonia were due to direct extension of the diphtheritic process—a matter of no small importance in prognosis, for this variety of pneumonia was of very grave import. The prognosis rested chiefly on three factors, viz.: (1) The virulence of the diphtheria; (2) the stage of the disease; and (3) whether or not it was an operative case.

Regarding the matter of treatment, the reader of the paper said that he felt convinced that cases of diphtheria complicated by pneumonia should be separated from other cases of diphtheria; indeed, he believed that it was better to isolate all cases of pneumonia. The sick room should be kept at a temperature of not over 70° F., and should be well ventilated. Cases of intubation and tracheotomy should be most carefully guarded from contact with cases suffering from broncho-pneumonia. Antiseptic inhalations were useless; antipyretic drugs should be avoided, and instead the cold pack should be employed. This not only reduced the fever, but stimulated the patient. In the early stages, where antipyretic treatment was indicated, he favored the frequent application of ice-cold compresses to the chest. The use of diphtheria antitoxin in extra large doses was to be recommended in broncho-pneumonia complicating diphtheria. If the new anti-streptococcus serum proved equal to the claims made for it, we would have in this new agent a remedy which would be chiefly used to prevent such complications of diphtheria as broncho-pneumonia, while the diphtheria antitoxin would be employed to combat the toxins of diphtheria. The Board of Health of New York city is now working in this new field, and it was expected that before long some of this new anti-streptococcus serum would be at the disposal of clinicians.

Dr. H. M. Biggs said that it was now pretty generally known that with the exception of lobar pneumonia, which might be due to Fraenkel's pneumococcus, the other varieties of pneumonia were not specific infections, but resulted from the action of a variety of micro-organisms. In his opinion, the frequency of pneumonia as a complication of diphtheria was to be explained by the fact that the lowered powers of resistance of the human organism due to the diphtheria made the individual an easy prey to germ infection. It was because of the depressing effect of "hospitalism" that pneumonia was a more frequent complication of diphtheria in hospitals than in private practice. In hospital practice, he considered it advisable, though by no means essential, to isolate cases of pneumonia. He heartily agreed with the author of the paper regarding the inutility of antiseptic inhalations, particu-

larly the use of steam. This method of treatment could hardly fail to be very depressing to the patient. He favored cold as the best general antipyretic treatment, and considered that there was no contra-indication to its use except collapse. Even in cases of acute nephritis he had seen it used with benefit. Poultices he looked upon as an abomination, except in rare instances to relieve the pain of a dry pleurisy. Ice-poultices were much better.

Dr. W. H. Park said that while it might be more prudent to isolate cases of pneumonia, he had not yet become convinced that pneumonia developed in the hospital by infection of one patient by another; certain it was that repeated attempts had failed to obtain cultures of streptococci from different parts of the wards. He believed that in many instances the pneumonia, which was due to the streptococci or pneumococci, was the more important disease, and the diphtheria the complication. It has been the custom at the Willard Parker Hospital for the past two years to maintain the wards at a temperature of at least 80° F., the idea of the one who advocated it being, I believe, that as diphtheria was less prevalent in the summer, it was probably better to keep the wards at a summer temperature. A two-years' trial has proved this temperature to be detrimental, especially in laryngeal diphtheria. During the past eight weeks the effect of keeping the wards cooler, at 70° F., had been tried, and it had been already observed that there was an apparent diminution in the number of cases of pneumonia, and a lessened mortality among the young children. The former high temperature of the wards had acted unfavorably, in an indirect manner, by preventing proper ventilation. It was difficult to understand how the frequent occurrence of pneumonia during the past year in the cases of diphtheria treated in the Willard Parker Hospital could be attributed to sepsis, produced, as Dr. Winters, one of the visiting physicians of the hospital, claimed it was, by the use of diphtheria antitoxin, because the antitoxin serum is perfectly sterile. The only way in which it could be conceived to aid in the production of pneumonia was by lowering the vital resistance of the individual. As a matter of fact the proportion of cases which developed pneumonia, under the use of antitoxin, had been less than in the pre-antitoxin period. The actual number of cases had been larger because so many more had remained alive.

Dr. J. W. Brannan said that during the past year at the hospital the frequency of broncho-pneumonia in the cases of diphtheria had attracted the attention of the attending physicians. After a careful study of the subject, he had come to the conclusion that the reason so many pneumonias had been observed was that this complication of diphtheria had developed in the cases which had been saved by antitoxin. In the preceding year, sepsis had been responsible for about 30 per cent., and laryngeal stenosis for 30 per cent., but in the year just past sepsis and laryngeal stenosis together had only caused about 25 per cent. of the mortality, from which it appeared that broncho-pneumonia had been the cause of death in a large number of cases that before the use of antitoxin would have died of sepsis and laryngeal stenosis.

Three important therapeutic measures had been recently introduced at the hospital, viz.: (1) A much larger air-space had been provided for each patient; (2) the temperature of the wards had been kept down to 70° F.; and (3) elevating the foot of the bed ten inches, in order to prevent the drainage of inflecting fluids from the throat into the lower air-passages. This latter plan had been adopted at the suggestion of Dr. W. W. Seymour, of Troy.

Dr. W. P. Northrup said that in order to determine the liability of producing *schluck pneumonie* from feeding children wearing the present form of intubation tube, Dr. O'Dwyer had caused children, who were already hopelessly ill, to drink a mixture of lampblack and milk. At the autopsies on these children it had been found that in not a single instance had either the pigment or the particles of milk passed lower down than the inferior extremity of the intubation tube. He was positive that in children under 2 years of age, although the pneumonia might at times be lobar in its distribution, it was in all cases, anatomically speaking, a broncho-pneumonia. By this he meant that in these very young children with pneumonia, a very considerable part of the lesion was to be found in the bronchi. Theoretically, Dr. Seymour's suggestion about securing drainage away from the lungs was a good one, but in practice it was difficult to keep the children in proper position. Although so much had been said at this time condemnatory of the poultice, he had not felt that he could entirely dispense with it. It was the continued poulticing, and not its occasional use, that seemed to him objectionable.

Dr. William Watkins Seymour, of Troy, said that before putting into practice the method of drainage by gravity, to which allusion had been made by the preceding speakers, he had found pneumonia a frequent complication after intubation and tracheotomy. He had been surprised to see how much better his results had been since he had adopted this plan of raising the foot of the bed 16 inches. Eight out of the last ten cases intubated by him had recovered. In all these, the hot jacket or poultice had been used.

Dr. Andrew H. Smith called attention to the fact that in nearly all cases of broncho-pneumonia death results from exhaustion of the right ventricle of the heart, due to the great obstruction in the pulmonary circulation. As poorly aerated blood circulated through the lungs with much more difficulty than normal blood, it was not only important that thorough ventilation of the sickroom should be secured, but also that the patient be allowed to inhale oxygen. He had seen some very remarkable results from the early and persistent use of oxygen inhalations in this class of cases. The heart could be still further relieved by using nitroglycerin or the nitrites to dilate the blood-vessels. He was thoroughly convinced that the too common practice of using digitalis, in these cases, where the peripheral circulation was already obstructed, had been responsible for a frightful loss of life.

Dr. Achilles Rose thought that the same effect on the circulation that resulted from inhalations of oxygen could be still better attained by giving enemata of car-

bonic-acid gas, which would cause an increased interchange of oxygen in the alveoli of the lungs. This treatment by the rectal introduction of carbonic-acid gas possessed, in his opinion, much merit, although it had been hastily abandoned by most physicians because it had fallen short of the extravagant claims made for it by Bergeon and others in the cure of consumption.

CIRCULAR OF INFORMATION REGARDING THE DANGER OF CASES OF DIPHTHERIA COMMUNICATING THE DISEASE TO OTHERS AFTER CONVALESCENCE.

Bulletin of the New York Board of Health.

Diphtheria is due to a germ known as the diphtheria bacillus. This germ is present in the membrane and in the secretions of the mouth, nose, and throat of cases of diphtheria. The disease is only produced by the reception of these germs into the mouth or air-passages of other persons. The discharges from the nose and throat of cases of diphtheria containing these germs may be received on handkerchiefs, towels, bedclothing, carpets, rugs, personal clothing, toys, books, etc., dry, become pulverized, and breathed in as dust, or they may be transmitted directly from the sick to the well through personal contact, as in the use of drinking-cups or eating-utensils which have been employed by the sick, or through kissing the sick, or through the direct discharge of the secretions on the hands or face or clothing of the nurse or physician or attendant in making applications to the nose or throat of the sick person. Thus, in numerous ways the germs find their way from the throat of the sick to the mouth or air-passages of the well; and if then the conditions are favorable for the development of diphtheria in the throat of the person receiving them, after a varying period the disease is produced. Diphtheria only follows the reception of the germs in the throat if favorable conditions for their growth exist there. In many cases the germs remain for many days and increase in number in the throats of healthy persons who have been in contact with cases of diphtheria, without producing the disease. Well persons who have these germs in their throat may convey them to others who contract the disease, while they themselves escape.

During convalescence from diphtheria the germs of this disease often persist in the throat for many days after all signs of disease in the throat have disappeared, and after the individual is entirely well. Investigations show that in about thirty per cent. of cases they persist for three weeks or longer after the beginning of the disease; in fifteen per cent. for four weeks or longer; in five per cent. for five weeks, and occasionally even for a much longer time. Experiments have shown that almost invariably these germs are virulent and capable of inducing the disease in others, so long as they persist in the throat, and persons having such germs in their throats may convey the disease to well persons at any time. Observation, however, has proved that the chances of communication of the disease to well persons after complete convalescence are not great, excepting among children, who are far more susceptible to the disease and who are much more likely to become infected through the frequent introduction of articles into the mouth. The danger of communicating the disease to others after recovery is less than during the disease, because the number of germs is smaller, and because the secretions are less abundant and not likely to be discharged so that they would be received by other persons. Where persons do not remain completely isolated, as they are strongly advised to do, until cultures made from the throat show the absence of the diphtheria bacilli, they should constantly remember the facts set forth in this circular and use every precaution to prevent the communication of the disease to other persons, and should be particularly careful in their relation and contact with children.

Under no conditions will children whose throat secretions still show the presence of diphtheria bacilli be allowed to attend school of any kind, and under no conditions will adults be allowed to return to their occupation where this involves immediate contact with children.

(Signed) George B. Fowler, M.D.,
Commissioner of Health.

By order of the Board of Health,

Charles G. Wilson,
President.

Emmons Clark,
Secretary.

REGULATIONS REGARDING THE ISOLATION OF CASES OF DIPHTHERIA IN PRIVATE HOUSES.

Bulletin of the New York Board of Health.

In private houses the duration of isolation of cases of diphtheria after apparent complete convalescence of such cases shall be determined by the physician in attendance, with the following conditions:

First. Children convalescent from diphtheria shall not be allowed under any conditions to attend any kind of school—*i.e.*, day-school, Sunday-school, dancing-school, etc.—until cultures show the absence of diphtheria bacilli in the throat.

Second. Circulars of information regarding the persistence of virulent diphtheria bacilli in the throats of convalescent cases of diphtheria and the dangers from infection arising from such cases shall be furnished by the Health Department and presented by the attending physician (if the patient is a child) to the mother, father, or guardian, or, if the patient is an adult, to the patient; and the meaning of the circular and the significance of its contents explained to them.

Third. The attending physician, when continued isolation is not maintained, shall immediately notify, in writing, the Chief Inspector of Contagious Diseases, of the Health Department, of his action, and disinfection of the premises may then be performed by the Health Department.

Exceptions to this rule regarding the time of isolation of convalescent cases of diphtheria in private houses shall be:

(1) Teachers of all kinds.

(2) Persons whose occupations bring them into immediate contact with children.

The regulations of the Health Department regarding isolation of cases of diphtheria in boarding-houses, apartment-houses, hotels, and tenement-houses heretofore observed shall be continued.

(Signed) George B. Fowler, M.D.,
Commissioner of Health.

By order of the Board of Health,
Charles G. Wilson,
President.

Emmons Clark,
Secretary.

REVIEWS.

The Pathology and Treatment of Venereal Diseases. By Robert W. Taylor, M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York; Surgeon to Bellevue Hospital, and Consulting Surgeon to City (Charity) Hospital, New York. First Edition. Lea Brothers & Co., Philadelphia, 1895. One octavo volume, pp. 1002, with 230 illustrations and 7 colored plates.

It is with interest and profit that one reads Professor Taylor's exhaustive treatise on Venereal Diseases, with their complications and sequelæ. The vast amount of research which the work contains, together with the results of the author's large and carefully observed personal experience, extending as it does over a period of many years, impresses one throughout the book, as does also the broad and unprejudiced manner in which Dr. Taylor presents and reviews the many theories that have been advanced regarding the etiology, pathology, and treatment of these diseases, and the scientific and conservative conclusions which he draws. The volume, which consists of over one thousand pages, is profusely illustrated with new and clearly executed cuts and colored plates, and is divided into an Introduction and three parts.

The Introduction is devoted to the history of the three venereal diseases—gonorrhœa, syphilis, and chancroid—and shows in a clear and concise manner the etiological differences between them, at the same time reviewing the many controversies between the unicists and dualists.

The First Part, which consists of over four hundred pages, is devoted to gonorrhœa and its complications and sequelæ in the male and female, and begins with an interesting chapter on the anatomy and physiology of the penis, the urethra, the bladder, the prostate, and accessory parts.

Although the author believes that the gonococcus Neisser is the etiological factor in a large majority of cases of gonorrhœa, yet he demonstrates in a very conclusive manner that the disease may be, and sometimes is, caused by other pyogenic microbes, "the staphylococcus and the streptococcus, and perhaps others whose virulence is not yet demonstrated."

The pathology and treatment of gonorrhœa, both acute and chronic, and of stricture of the urethra, are presented in entirely new and scientific light; the author drawing his conclusions from pathological research, combined with a vast and lengthy clinical experience.

In considering the treatment of stricture, the author protests against the reckless and indiscriminate performance of internal urethrotomy for every form and variety of contraction in the penile urethra, and shows conclusively, both from an anatomical and clinical standpoint, how normal and physiological contractions are diagnosed as strictures of large calibre, and thereupon ruthlessly cut. He clearly demonstrates, by the recital of personal cases, how soft and semifibrous strictures can be cured by careful and gradual dilatation, the infiltrating cells which constitute the stricture being absorbed through the pressure and stimulation which the sound exerts, on the stenosed and thickened urethral walls. For fibrous and inodular stricture, the author advises conservative cutting, always bearing in mind the fact that the so-called calibre of the urethra is not uniform, but varies in different individuals, and in different parts of its length.

The various operations for the relief of stricture of the urethra, together with the preparation of the patient for operation, and the subsequent treatment, are most exhaustive and complete in every detail; the division of the perineal operations for bladder drainage and deep stricture clears up a part of genito-urinary surgery where there has been much confusion in nomenclature regarding these different operative procedures.

The chapters on cancer of the penis, varicocele, hydrocele, and hematocele give the reader a vast amount of valuable material in a very compact space; which may also be said of the manner in which the operations for these conditions are described.

The Second Part is given up to an exhaustive study of the chancroid, or soft chancre, and its complicating lymphangitis and adenitis. In this part Dr. Taylor modestly refers to the important clinical fact, discovered and announced in 1876 by Dr. Bumstead and himself, although independently of each other, that the chancroid has no specific virus of its own, and may, under certain circumstances, originate *de novo*.

The Third Part of the work, which is devoted exclusively to the consideration of syphilis, gives, besides the author's well-known views, everything of value that has been written on this subject up to the present time, and is therefore a storehouse of knowledge to all those interested in this disease. The nature, pathology, evolution, and course of syphilis, showing, as it does, in its early stages certain points of resemblance to the exanthemata and to diphtheria, is discussed at length and brought out in a strikingly new and interesting manner. The pathology of the chancre is most thoroughly described; the text being elucidated by numerous microscopic drawings of the initial lesion and its surrounding tissues, which clearly show the coat-sleeve arrangement of the infiltrating cells around the blood-vessels, not only those set in the chancre, but also some distance from it. From a careful study of the text and its accompanying plates, the utter futility of aborting syphilis by the excision of its initial lesion will be seen. The early and late syphilides, together with the affections of the hair, nails, and mucous

membranes, are most beautifully illustrated by half-tones and colored plates taken from the author's cases, and therefore give the reader accurate and lifelike pictures of these various affections, which are minutely described in the accompanying text.

The treatment of syphilis, beginning as it does with the abortive treatment of the disease, by the excision of its initial lesion, is the most complete and at the same time concise essay that it has been the writer's good fortune to read. The various methods and the different drugs and preparations recommended are given in detail, and their merits or demerits honestly stated; after which, the author lays down a broad line of treatment, that it will well behoove workers in this field to carefully study and follow; this treatment is ably described, is not confined to the routine use of one preparation and one mode of administration, but includes many preparations of mercury, given by the stomach, hypodermic injection, inunction, or fumigation, according to the condition of the patient and the variety of lesion that he or she may present.

When one who is familiar with the literature of these disease has carefully read and considered Dr. Taylor's work, he will lay aside the volume with the firm conviction that he has read the clearest, most unbiased, and ably presented treatise as yet published on this vast subject.

Messrs. Lea Brothers & Co., the publishers, are to be congratulated upon the general appearance of the work, which is most excellent in all respects, but especially upon the illustrations and colored plates, which show a decided superiority over those usually observed in other works devoted to this subject.

A TREATISE ON NERVOUS AND MENTAL DISEASES. By LANDON CARTER GRAY, M.D., Professor of Diseases of the Mind and Nervous System in the New York Polyclinic. New (2d) edition. In one very handsome octavo volume of 728 pages, with 172 engravings and three colored plates. Cloth, $4.75; leather, $5.75. Philadelphia: Lea Brothers & Co., publishers, 1895.

The first edition of this treatise was fully noticed in the NEWS. The fact that it has gone to a second edition in two years shows that its merits have been fully appreciated by the profession at large. The present edition has undergone a real revision, the result of which has been to greatly increase the value of the work. Additional chapters, describing different forms of insanity, have been added, the anatomical introduction has been remodelled, and the index, which in the first edition was defective, has been made all that could be desired. Some new and beautiful plates have been added, and the illustrations in the first edition have in many cases been re-executed. Cortical histology and histo-pathology, as illustrated by the work of Golgi, Cajal, and Andriesen, have received due consideration, both in the introduction and under the pathology of some of the organic forms of brain disease. The bibliography has been omitted in order to make room for what the author regards as more important new matter. The recognition by the author of the position and importance of syringomyelia is in contrast with the views expressed by him in the first edition. It is not necessary to again review in detail this work. The first edition has met with deserved success, and the present shows many improvements, both in positive additions in the text and illustrations of material of great value, and in the correction of the defects and shortcomings of the previous edition. The treatise will continue for many years to be a welcome book to the student and general practitioner. The paper and printing are of the very best quality.

AN ELEMENTARY COURSE IN EXPERIMENTAL AND ANALYTICAL CHEMISTRY. By JOHN H. LONG, M.S., Sc.D., Professor of Chemistry and Directory of the Chemical Liboratories in the Schools of Medicine and Pharmacy in the Northwestern University. Small 8vo. 497 pages and Index. Chicago: E. H. Colegrove & Co.

WE are pleased to recognize in this manual another evidence of the tendency to abandon the use of a course in qualitative analysis for practical instruction for beginners in chemistry. Dr. Long rightly observes that the system gives a distorted view of the relative importance of that department of chemistry. The complex problems set for the student in the usual qualitative course are not representative of the actual work either of research or commercial analysis. The classification by means of the so-called "group-reagents" is not a scientific one, but a purely arbitrary arrangement for a narrow practical purpose.

In the present work Dr. Long devotes over 250 pages to the experimental part; that is, detailed directions for performing 226 experiments, exhibiting the properties of elements and important compounds, and the general principles of chemistry. There are but twenty-two illustrations in this part, and most of these are not particularly commendable. We think it would be wise to illustrate such works quite freely, selecting the simplest apparatus, and to give a preliminary chapter of some length on the forms and uses of the standard articles, test-tubes, dishes, etc.

In the section on qualitative analysis the usual group-reagents are used. There are also chapters on spectroscopy, toxicology, and volumetric analysis. The decimal system of weights and measures is employed. The work is well printed.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FROM FEBRUARY 7, 1896, TO FEBRUARY 22, 1896.

February 11.—STEELE, J. M., Surgeon, detached from the "Independence" and ordered to the "Monadnock."

February 19.—WALES, P. S., Medical Director, placed on retired list from February 27th.

GUITERAS, D. M., Surgeon, detached from the "Montgomery" and granted six months' sick leave.

CURTIS, L. W., Passed Assistant Surgeon, detached from duty at Indian Head Proving Ground and ordered to the "Montgomery."

MORRIS, L., Assistant Surgeon, detached from the naval hospital at Philadelphia and ordered to the Indian Head Proving Ground.

February 21.—DICKINSON, DWIGHT, Medical Inspector, ordered as member of the Retiring Board, February 28th.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

OSTEOPLASTIC OPERATION FOR LOSS OF SUBSTANCE OF THE TIBIA. SKIAGRAPH SHOWING RESULT.

BY HOWARD LILIENTHAL, M.D.,
OF NEW YORK;
ASSISTANT SURGEON TO MOUNT SINAI HOSPITAL.

THE following case is deemed worthy of record, because it exemplifies a rather rare surgical operation, and also because the result, as shown by the skiagraph, is quite different from what might have been reasonably surmised from the history of the operation, from inspection after recovery, and even from the most careful palpation.

M. S., a boy nine years old, was run over by a horse-car, early in June, 1894, and sustained a compound comminuted fracture of the right tibia, with severe laceration of the soft parts. There had been a left coxitis resulting in ankylosis some years before, but otherwise the boy was healthy. Severe infection, with profuse suppuration, so menaced the life of the patient that a surgeon, who saw him a few days later, entertained the idea that amputation would be necessary. On June 8th, about six days after his injury, his parents brought him to Mount Sinai Hospital, where I at once proceeded to drain the wound by several ample incisions. The tibia had been split and comminuted throughout almost its whole shaft, but by some lucky chance the fibula was intact. Many little detached pieces of perfectly dead bone were removed, and it was found that from two to two and a half inches of the lower third of the tibia was gone. The destruction of tissue had been so great that daylight could be seen through the leg for a space fully as large as a half-dollar. Recovery from this operation was slow but uninterrupted. Several pieces of dead bone were removed at various times, but finally every sinus closed. The limb was, however, useless without the aid of splint and crutch, the loss of tibial substance allowing the foot to flap about in rotation around the unbroken fibula. An aluminum splint was now ordered, and the boy was allowed to walk about with the aid of crutches in the hope that ossification of the interposed fibrous tissue might take place. I did not see the patient again for several months, and it was then noted that the head of the fibula had been apparently pushed away from its attachment to the tibia and projected well above the knee-joint, causing a deforming protuberance.

On July 23, 1895, fully ten months after recovery from the previous operation, I again operated to try to restore the function of the limb by

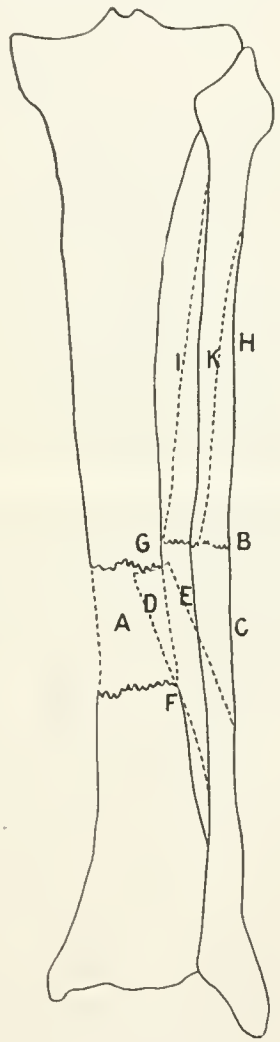

DIAGRAM OF OSTEOPLASTY.

tibio-fibular osteoplasty, an operation suggested by success in similar cases in the hands of Gerster, Sands, and others. A longitudinal incision was made over the hiatus in the tibia, *A* (see diagram), all non-osseous tissue between the two ends of bone was removed with the knife, the

bone itself being freshened with the chisel. A long incision was now made over the fibula and an osteotomy was performed, cutting the fibula at a point, *B*, just above the lower extremity of the upper tibial fragment. The lower fibular fragment, *C*, was now tilted inward in such a manner that its side rested against the lower piece of tibia, and its end rested against the end of the upper tibial fragment, as is shown by the dotted lines *D* and *E*. At *F* and *G*, holes were drilled through fibula and tibia and the bones were fastened together with thick twisted silk. The upper piece of fibula was held by the bandage so that it slanted toward the tibia in a position something like that shown by the dotted lines *I* and *K*, but it was not sutured. The skin wounds were now entirely closed with catgut stitches, and a firm dressing with a plaster of paris splint was applied over all and was kept in place for three weeks, when, at the first dressing, all was found to be healed, excepting two small sinuses, through which, later, the silk sutures and a small, loose piece of bone were removed. Bony union was very slow, and it was not until November, 1895, that I felt safe in allowing the splint to be discarded. Since that time the patient has been perfectly well and walks with only a very slight limp, which is due to his ankylosed left hip. The head of the fibula has returned to its normal position.

The skiagraph, which accompanies this paper, was very kindly made for me by a gentleman who modestly, but firmly, refuses to allow me to refer to him by name. The picture, though taken through the stocking and at a distance of fifteen inches from the source of energy, has been in its lower part somewhat overexposed. The view is a posterior one, which accounts for the seemingly reversed relations of the bones. It will be seen at a glance that the result is an almost normal position of tibia and fibula, with a very thick and dense bridge of bone connecting them obliquely. A faint light streak in the lower part of this bridge seems to indicate the medullary canal of the displaced fibula, but the free end of the upper fibular fragment has separated from the tibia and has assumed its normal position, being connected with the lower fragment of fibula by this same bony bridge. How this state of affairs was brought about, only a series of skiagraphs, taken at different times during the healing process, might have disclosed. It is, however, probable that if the light streak referred to is in reality the marrow canal of the fibula, that the upper fibular fragment assumed its nor-

mal position before the ossification of the callus. The new bone is evidently denser and stronger than the normal, which accounts for the perfect functional result. The boy was presented at the meeting of the Surgical Society of March 25th.

THE CLINICAL ASPECT OF CHRONIC DIFFUSE NEPHRITIS.[1]

By J. C. BIERWIRTH, M.D.,
of Brooklyn, N. Y.

My observations during the past ten years have impressed me with the idea that chronic diffuse nephritis is among the most frequent, if not *the* most frequent, disease in persons past middle life. This thought has grown stronger with every year, and often I have been appalled by the large number of cases seen in one year. There is also probably no disease which presents so varied a clinical picture, frequently made up of a series of vague and indefinite symptoms, difficult to diagnose, and hence often misinterpreted. In presenting this subject I desire to make a plea for an early diagnosis and the adoption of proper means for the comfort of the patient, and to guard him from the dangers, both immediate and remote, which appertain to this disease.

To my mind the classification of renal diseases made by Delafield[2] is the simplest and clearest. He divides them into acute and chronic parenchymatous, acute and chronic interstitial, and acute and chronic diffuse nephritis, and adds "that this classification seems to me to be theoretically correct, but yet I must admit that from a clinical standpoint nearly all the cases may be conveniently arranged into the two classes of acute and chronic Bright's disease." Under parenchymatous nephritis he includes all kidneys in which the lesion is confined to the epithelial cells lining the tubules and the capsules of the glomeruli; under interstitial nephritis, all those kidneys in which the lesion is in the stroma, and under diffuse nephritis, all those kidneys in which the lesion is in the tubes glomeruli, stroma, and arteries.

Chronic diffuse nephritis is more frequent in males than in females, and occurs chiefly in persons past middle life. Constitutional syphilis, intemperance, and privation, are counted among the most prolific causes. My personal experience has led me to think that the disease is especially frequent among brain-workers, among men whose nervous systems are continually on an overstrain, who have large business responsibilities, and who, as a rule, lead temperate lives. Whether their continuous strain leads first to changes in the arteries, owing to a faulty innervation and nutrition, and through these to changes in the kidneys, I am not able to state, but I incline to this belief. Chronic diffuse nephritis also occurs frequently in the course of all chronic diseases, such as phthisis, cirrhosis of the liver, emphysema, chronic suppurative processes in the bones or any part of the body, and especially in chronic gout and rheumatism.

As already stated, there is no disease which has so varied a train of symptoms. This will not seem strange when we consider that the symptoms are not dependent on the kidney lesions alone, but on the associate lesions as well. Of these, the changes in the heart and circulation have a far-reaching influence, and may produce symptoms in other organs, of such intensity as to mask entirely the original disease. The degree of the various lesions also modifies and changes the clinical picture, often to such an extent that we are for a long time in doubt as to diagnosis. The changes in the kidneys often escape notice of the patient entirely and he usually does not seek advice until circulatory disturbances make their appearance. Life insurance examinations discover many unsuspected cases. Disturbances of vision lead many to consult an oculist to whom changes in the retinal vessels and fundus reveal the first suspicion of the real malady, and of which the subsequent analysis of the urine is usually confirmatory. In some cases these retinal changes are the first symptoms, even before the urine gives any evidence of kidney disease, and these cases, I think, belong to the class where arterial changes are the cause of the nephritis. It would be impossible to enumerate all the different ways in which the disease may first show itself, but the chief interest is centered, no doubt, in an early diagnosis, for it is only in the beginning of the disease that treatment and advice may be of any benefit to our patients. They usually consult us about disturbances in any one of the organs of the body except the kidneys. Upon questioning them we find that they feel tired, suffer easily from headache, have occasional nausea and vomiting, have lost flesh and strength, and are not able to do their work properly. Upon examination we find them more or less anemic and listless, with an accelerated pulse, often an increased arterial tension and some hypertrophy of the left ventricle. There is usually present a slight degree of edema of the lower extremities, not sufficient to be noticed by the patient, but easily found when sought for by pressure over the

[1] Read before the Kings County Medical Association, February 11, 1896.

[2] The same author's description of these lesions is accepted.

tibia. This is perhaps the most common type of a beginning diffuse nephritis. These cases are often mistreated until an examination of the urine discloses their true nature. Others again complain of more or less severe neuralgic pains in different parts of the body, which do not yield to the usual remedies. These cases are rather of common occurrence, and I look with especial suspicion upon those complaining of severe attacks of sciatica. The pain may be due to a gouty or rheumatic diathesis, but in four cases seen during the last two years chronic Bright's disease existed.

One of these cases, a man, about fifty years of age, came to me suffering severely from sciatic pain. He was rather pale, pulse ninety and higher upon slight exertion, disturbances of digestion and some headache. He had slight edema over the tibia but had not noticed it, and did not think there was any change in the urine. The record of the urinary analysis showed: quantity, 38 oz.; sp. gr., 1016; albumin a trace; urea, 8 grs. per oz., or 304 grs. per 24 h., a few hyaline casts. The patient improved under treatment, but had a second and more severe attack of sciatica the following year, and died early this winter from an acute exacerbation of his chronic Bright's.

The other three cases have had several attacks, usually one each winter, but they are in good and fair health after the pain has subsided.

Another form in which this disease first shows itself is by a chronic cough, due to edema of the lungs. A case in illustration is the following:

A woman, about 60 years of age, consulted me in December, 1891, for a persistent and distressing cough, which she had had every winter for a number of years. She had been attended by three or four different physicians, each of whom had prescribed a cough mixture, with usually little or no benefit. An examination of her chest showed two or three patches of edema over the right lung, without any further lesion in the parenchyma or bronchi. Her temperature was normal, pulse rapid with moderate increase in tension and cardiac dilatation with some hypertrophy. The analysis of her urine showed decided evidence of renal changes. In the past five years she has had several acute exacerbations, from one of which I did not think she would recover. In the last attack she had general anasarca with much diminished urine and marked disturbance of heart and circulation. She recovered, however, and has been in very fair health during the past two years.

Repeated conjunctival hemorrhages have led me to discover renal disturbances of a grave character in cases where no other symptoms were present. There are other examples in which this disease comes to the surface, in the form of pains in the muscles of the extremities or trunk, analogous to rheumatism, but which are really due to excrementitious matters circulating in the blood, and not eliminated by the diseased kidneys.

The majority of cases of chronic diffuse nephritis under proper care and surroundings will go on for a number of years without getting much worse, but they are continually liable to acute exacerbations, one of which may end fatally, even though the pre-existing chronic disease has not advanced far. Cases are very apt to die if they are attacked by any severe illness, especially pneumonia. Individuals may have atrophied kidneys for years without presenting any symptoms, a suddenly fatal attack of uremia, brought on by exposure to cold and wet. The first evidence of the disease in others will be a sudden and severe attack of dyspnea, usually at night. While others again are attacked by pleurisy or pneumonia, or sustain some severe injury, when the inflammation of the kidneys will suddenly show itself.

The urine in chronic diffuse nephritis presents certain well-marked changes, although very variable in character. The amount in twenty-four hours is increased, in diabetes mellitus, diabetes insipidus, and in chronic Bright's disease, and it is diminished in all acute forms of renal disease, and in all diseases accompanied by high fever. In chronic diffuse nephritis we find the action of the kidneys by no means uniform, and we cannot lay down any law for our guidance. In my experience, I have found the quantity of urine but little altered from the normal, in quite a large percentage of cases it is rather diminished, to forty or thirty-five ounces, but in an equally large percentage of cases it will be found to be increased to sixty or seventy ounces, or to be normal. I believe, however, that in the course of every case of chronic diffuse nephritis, the amount is diminished at various times, and certainly always toward the end of the disease.

The specific gravity, however, falls regularly below the normal and, as a rule, varies between 1010 and 1016. Even if the quantity of urine is lessened, the specific gravity does not correspondingly increase. In some cases in which the quantity is increased to seventy ounces or more, it will fall to 1008 or 1005.

Albumin is present in nearly all cases, but usually only in small amount, the majority of cases showing a trace. If the urine shows a large quantity of albumin, the case is one of acute or chronic parenchymatous nephritis, or an acute exacerbation of a chronic diffuse nephritis. In

some cases, for a longer or shorter period, albumin may be absent; these, I think, are cases in which the kidney lesions are not far advanced and in which the albumin is the result of temporary circulatory disturbances.

Casts are to be found in nearly all cases, but in some they too may be absent for a varying period of time. Hyaline casts, of a very delicate structure and often difficult of detection, are chiefly found, although granular casts and an occasional epithelial cast may make their appearance from time to time.

The quantity of urea is regularly diminished in chronic Bright's disease. Allowing for considerable normal variations, physiologists state the amount in health to be about 500 grains in the twenty-four hours. In cases of chronic diffuse nephritis which have come under my notice, the amount has rarely been more than 350 grains, and as a rule, 300 grains or less. The other solids, phosphates, urates, chlorides, and sulphates, are usually diminished.

As the disease progresses we find a greater uniformity of symptoms. Owing to the faulty elimination of urea the celebral symptoms, such as headache, vertigo, convulsions, or coma, make their appearance and become more frequent. The gastric disturbances are more severe and persistant, vomiting being of frequent occurrence, edema of the feet and legs becomes more marked, and is noticed by the patients, and toward the end it usually goes on to general anasarca. Attacks of edema of the lungs are of frequent occurrence. Dyspnea is now a more constant symptom, at first only upon going upstairs, then upon slight exertion, and finally it becomes continuous. The pulse becomes more accelerated, is irregular and intermittent, and the arterial tension is high. In some cases the patients die from an attack of uremia, in others from the general anasarca and exhaustion, an attack of pneumonia, or an effusion into the lateral ventricles of the brain. An acute exacerbation may prove fatal at any time in a patient in whom the chronic diffuse nephritis had previously produced but little disturbance, and these acute exacerbations are the source of greatest danger to the patients suffering from the disease.

Having obtained one of the above-enumerated histories, our diagnosis naturally depends upon an analysis of the urine, and it is owing to the lack of proper care and precaution in this that so many cases escape detection. It should be made the rule that only a specimen of the entire twenty-four hours secretion be examined. If we take a specimen from any part of the twenty-four hours, and do not find it to contain albumin, we can never positively assert that the kidneys are not diseased. Furthermore, we must bear in mind that one analysis is not conclusive, for albumin and casts may be absent for quite awhile, and, if we do not find them at first, one or two analyses per month, made during a period of six months, will usually clear up the case. It is also necessary to know the exact quantity secreted during the twenty-four hours, so as to be able to determine the total amount of urea and other salts. The search for albumin is usually our first step in the analysis, and owing to the fact that in chronic Bright's disease it is usually present in only very small amounts, a trace, its detection is often difficult, and unless great care be exercised, it is not found. The urine to be examined should first of all be perfectly clear, as otherwise a slight turbidity cannot be detected. Fresh urine can be rendered clear by one or two filtrations through a double wet filter. If not successful the addition of a small portion of caustic potash will precipitate the earthly phosphates, which carry down the remaining impurities. Should the specimen continue cloudy after filtering out the earthly phosphates, the addition of a few drops of the magnesia mixture will cause a copious precipitate of the alkaline phosphates, leaving the urine perfectly clear after filtration. The tests employed for the detection of albumin are so numerous that it is impossible to treat of all of them here. Every one who is in the habit of making frequent analyses of urine accustoms himself to one or two tests and disregards the rest. I have used and tried most of them, but of late have confined myself to two: the heat and nitric acid and the ferro-cyanide of potassium tests. In searching for albumin, we must bear in mind that all urines contain more or less mucin, or, as it should be more properly called, nucleo-albumin, which is precipitated by most of the tests used in testing for albumin, including the heat and nitric acid test. The only test which does not precipitate mucin is the ferro-cyanic test. Purdy, in his recent work on "Practical Urinalysis," mentions a test with a saturated solution of chloride of sodium and acetic acid, which is said not to precipitate mucin. I am not familiar with it, but it is easily applied and might be used as an extra test in doubtful cases. My procedure in testing for albumin is usually as follows: Starting with a perfectly clear acid urine, I fill a test tube to the depth of 1½ inches with it, boil it, and add 10 to 15 drops of strong nitric acid,

cork up the test tube and set it aside for 6 to 12 hours. It is necessary to set the tube aside for some time, as in traces of albumin a precipitate often does not make its appearance until 15 or 20 minutes after boiling. The next day the precipitate will have settled at the bottom of the test-tube, leaving the urine clear above. I then boil the specimen a second time, and, if I find that the precipitate does not re-dissolve, I conclude it is albumin.

I believe that if the nitric acid be added in sufficient excess, the mucin present will be held in solution and not interfere with the test unless it be present in considerable amount. Next I test the urine with a five per cent. solution of ferro-cyanide of potassium. I can best explain the application of the test by quoting from Purdy's work on "Practical Urinalysis": "Into the bottom of a clean test-tube is poured 15 to 30 drops of acetic acid; then about two or three times that amount of solution of potassium ferro-cyanide ($\frac{1}{20}$) is added, and the two thoroughly mingled by shaking the tube. The urine is next added, to the depth of two-thirds of the test-tube. If albumin be present, it will be precipitated throughout the whole volume of the urine in the form of a more or less milk-like flocculent cloud, according to the albumin present. The ferro-cyanic test applied by the above method avoids the mucin reaction, and precipitates all varieties of albumin, acid and alkaline. On the other hand, it gives no reaction with phosphates, urates, peptones, the vegetable alkaloids, or the pine acids." When these two tests are carried out faithfully as directed, I do not think any trace of albumin will escape detection. I was much gratified to see in a recent paper by E. E. Smith, Ph.D.—"Notes on Urine Analysis"—read before the Section on General Medicine of the New York Academy of Medicine, December 17, 1895, and published in the New York *Medical Record*, January 4, 1896, that he strongly advocates the above-recited two tests for albumin. He adds, however, for the detection of mucin a comparison tube, "an inch of clarified urine is placed in a test-tube, and two drops of dilute acetic acid are added." If a turbidity results in this tube, and a precipitate results from the heat and ferro-cyanide tests, then he ascribes the latter to mucin and not albumin. My experience thus far does not agree with this view; I have not had time to test it sufficiently, but my impression is that the ferro-cyanide test, as given by Purdy, does not precipitate mucin.

The next substance to be tested for is urea, *i.e.*, to determine the quantity excreted in the twenty-four hours; but I will not occupy your time in describing the mode of making these tests. Excretion of urea in twenty-four hours, in a case of chronic diffuse nephritis, is rarely above 300 grains, but how low the amount may fall without producing cerebral symptoms, is difficult to determine. The tolerance of urea in the blood varies markedly in different persons; some give uremic symptoms when they pass 200 grains or over, while others are perfectly comfortable when excreting only 75 to 100 grains. I am inclined to think that there are other factors besides urea or its derivatives which aid in the production of uremia. The urine of every patient suffering from chronic Bright's disease should be frequently examined for urea, and a daily test should be made when cerebral symptoms are present; for upon the amount of urea, and not upon the amount of urine excreted, depends our treatment and prognosis. We test for albumin and search for casts to make our diagnosis, but when these are once found and the presence of the disease is established, we need not recur to them again, for neither the number and kind of casts nor the quantity of albumin determine the prognosis and influence the treatment, but urea will, throughout the continuance of the case, require our constant attention.

The prognosis of chronic diffuse nephritis is always grave; the cases all end in death sooner or later, but many live for a long time in comparative comfort if properly cared for.

I do not believe that anything can be done to retard the progress of this disease, or remove the existing changes in the kidneys. Such drugs as bichloride of mercury, chloride of gold, arsenic, iodide of potassium, etc., have in my judgment no curative influence on the kidneys. If they do good, they do so by acting as general tonics, by improving the appetite and the condition of the blood. In the beginning of the disease all our efforts should be directed toward improving the general condition of the patients, in the hope that thereby we may retard the progress of the disease. They should live in a climate where this danger is reduced to a minimum, and that is a warm climate, where an out-of-door life is possible. If their means do not permit this change of climate, they should remain indoors during the winter months and live in as equable a temperature as possible. As a rule, they should give up their business pursuits, and live a life of ease and comfort, avoiding all excitement. All vicious habits should be given up, and the use of

alcohol, except perhaps a glass of wine as an appetizer, should be prohibited. The skin should be kept in as active a state as possible, by frequent baths. The diet should be nutritious and easily digestible, and in patients who suffer much from gastric disturbances, it should consist largely of milk. I am in the habit of letting them take but one solid meal per day, the other two meals being composed entirely of milk. Unless valvular disease is a complication, it has seemed to me that the circulatory disturbances are caused chiefly by an obstructed flow of the blood, due to the increase in arterial tension, and, no doubt also, to the obstruction in the renal circulation. The indication for the treatment of these symptoms then naturally suggests such remedies as nitrite of amyl, nitro-glycerin, and iodide of potassium. The first is rarely indicated except during an attack of uremic coma, or convulsions with high tension and a bounding pulse. Nitro-glycerin is certainly one of the most valuable remedies which we possess in this disease. Some patients have to take it more or less all the time. I usually give it in tablet form, $\frac{1}{100}$ of a grain every two, three, or four hours. If the tension is great it may be given every fifteen minutes until the pulse becomes soft, and then the interval may be lengthened to one or two hours. Iodide of potassium is certainly the best drug in this disease; it fulfills all the requirements by producing a dilation of all the arteries and maintaining it, and producing little or no disturbance if given in some bitter infusion, sufficiently diluted, and only after meals. My patients usually take it for two to three months at a time, in doses from fifteen to twenty-five grains daily. If the heart's action is too rapid, aconite in small doses is a valuable remedy, and if a cardiac stimulant is needed I prefer the fl. ext. of convallaria in ten to fifteen-drop doses, three or four times daily. Digitalis is in my experience objectionable, because of its great tendency to derange the stomach, and to increase arterial tension. Strophanthus is valuable, and iron and oxygen are excellent as general tonics. During an acute exacerbation the patient should be put to bed and kept on an exclusively milk diet, with applications of dry-cups over the kidneys, followed by hot fomentations. When the disease is far enough advanced to produce uremic symptoms, such as headache, twitching of the muscles, convulsions, coma, the more active measures, such as sweating and purging should be employed. Opium is, I think, a valuable remedy, although a dangerous one, in these conditions.

PHARYNGO-MYCOSIS LEPTOTHRICA.[1]

By JAMES T. CAMPBELL, M.D., M.R.C.S.,
of Chicago.

Almost all the cavities and the tubes of the body, which communicate with the exterior (*e.g.* alimentary tract, vagina, urethra, etc.), contain bacteria in abundance, even under normal conditions. The mouth is the natural habitat of many pathogenic and non-pathogenic organisms. Ordinarily the pathogenic organisms do no harm, sometimes however, they are capable of giving rise to disease. Thus, while the majority of us carry about with us constantly in our mouths the micrococcus lanceolatus, comparatively few individuals develop a croupous pneumonia. To the group of harmless organisms in the mouth belongs the ordinary leptothrix buccalis; it is almost constantly present, even in health, on the gums and between the teeth, and the finding of it, as a rule, would therefore be of no particular interest.

But, under certain circumstances, this organism can give rise to peculiar phenomena in the pharynx and grow in the form of characteristic colonies. The condition of the pharynx was named by B. Fraënkel,[2] in 1873, pharyngo-mycosis leptothrica. Jacobson[3] suggested that the name be changed to algosis faucium leptothrica, since it is now known that the leptothrix must be classed among the algæ and not among the fungi. Subsequent writers, however, have retained the older nomenclature.

The disease affects the following parts in order of frequency: the tonsils, the base of the tongue, the glosso-epiglottic fossettes, the posterior and lateral walls of the pharynx, the faucial pillars, the naso-pharyngeal vault, the upper part of the esophagus and the nasal fossa. Ackermann[4] has recently reviewed the whole subject in an address before a medical society in Griefswald, and describes at length the clinical and pathological phenomena met with in the disease. The colonies present a white or yellowish-white appearance, and form soft or horny polypoid masses or flat excrescences. In the tonsils they occur most often in the crypts. According to Heryng, the spreading may occur in two ways: (1) Through the formation of superficial excrescences upon the mucous membrane, which appear more or less bulging and firmly adherent. (2) Through the formation of wedge-like triangular processes

[1] Read before the Chicago Medical Society, December 2, 1895.
[2] 56th Versamml. deut. Naturforscher und Aerzte in Freiburg.
[3] Volkmann's kl. Vorträge, 1887.
[4] *Deut. Med. Woch.*, 1894, No. 46.

which break through the epithelium, and may extend deep into the parenchyma of the tonsil. As a rule, both tonsils are affected. At the base of the tongue the circumvallate papillæ and crypts are frequently affected. In many cases the disease is associated with an unusual amount of mental depression, which increases the deterioration of the general health; in others the subjective symptoms are but slight. The disease is usually discovered accidentally.

The symptoms complained of by the patient generally consist of a slight tickling, dryness, or burning in the throat; there may be slight dysphagia and sometimes a slight cough. Rarely there may be fever or anorexia.

As regards the etiology, little is definitely known. It was formerly thought to be secondary to caries of the teeth. Miller states, however, that the diseases of the teeth are due to other parasites, and that in them the leptothrix appears only secondarily. Adults are generally affected, females suffering more frequently than males.

Diagnosis.—When one has once seen a case the diagnosis can be made without the microscope. The condition must be distinguished from *lacunal tonsilitis*, a disease with an acute febrile onset, general constitutional symptoms, swelling and reddening, in which the flecks are soft and friable, readily separable, and easily raised with a probe; from *tonsillar concretions*, which can be easily enucleated, do not recur after removal and often disappear without treatment; from *herpes angina*, which invades the arch of the palate; from *diphtheria*, a disease in which there are severe general and local symptoms. The membrane is firmly adherent, requiring some force for removal, and then leaves a bleeding surface. Cultural methods establish the diagnosis; from *syphilitic plaques;* from *tuberculosis;* from *thrush* or *soor;* from *pemphigus.*

Course.—Generally very obstinate. The plugs artificially removed often return; occasionally there is a spontaneous cure. All agree that antiseptic solutions and astringents are insufficient. The best results are obtained by removal with forceps and cauterization.

The following case illustrates well the main characteristics of the disease:

Miss M., aged eighteen years; consulted me on September 16, 1894. In December, 1890, she suffered from a severe attack of diphtheria which seemed to have left the throat hypersensitive, since slight exposure invariably resulted in "sore throat," with accompanying white patches on the tonsils. These spots or patches, together with the soreness, usually disappeared in the course of three or four days under the employment of simple gargles. At no time had the spots remained longer than one week. These attacks came on at all seasons of the year, but more frequently during the colder months. In November, 1893, she contracted scarlet fever, and had again a very sore throat. Attacks of "sore throat" reappeared at intervals of about two months up till August, 1894, at which time, after the repeated employment of the usual gargles, it was observed that, though the soreness had passed away, the white spots remained. These have been present constantly till September, 1894, at which time I first saw the patient and made the following note: Over the whole surface of both tonsils and a small part of the adjacent post-pharyngeal wall are yellowish-white dots, corresponding in the main to the crypts normally found in these regions. The pillars of the fauces and tongue are quite free. The dots vary in size and shape, being rounded like millet seeds, mushroom and spur-like; some projecting out from the lacunæ for a distance of from 4 to 5 mm. These plugs look as if they could be easily brushed away, but when seized with the forceps are found to be adherent and very tenacious, so much so that the whole tonsil is drawn forward, and often there is a little bleeding after removal. There is no surrounding inflammatory areola. There are no carious teeth. The patient says that the throat seems dry, and the sensation is as if a foreign body, such as a bristle from a tooth brush or a fish bone, had lodged upon the tonsils. The tongue is clean, the breath not offensive. She complains of some slight physical and mental depression. About one month after first coming under observation a few spots developed on the right side of the base of the tongue adjacent to the tonsil. During the course of the disease there was noticed some apparent fusing of spots to form a small membrane not unlike diphtheritic patches.

A portion of the left tonsil was abscised and sent for examination to Dr. Lewellyn F. Barker, assistant resident pathologist to the Johns Hopkins Hospital, Baltimore, who reports as follows:

"The pieces were fixed in two ways: one set in absolute alcohol, another in sublimate. The alcohol tissues were imbedded in celloidin; the sublimate tissues in paraffin. Sections were stained in hematoxylin and eosin, in safranin, in Lugol's solution, and by Gram's method.

"A few patches are seen upon the surface of the mucous membrane, but in the main the disease process is confined to the crypts, which are filled with fine plugs visible to the naked eye. On microscopical examination these plugs are seen to consist of a central core of horny squamous epithelium, clinging to which are masses of bacteria and bunches of the characteristic leptothrix threads. Shreds of epithelium project laterally from the main core, and between these micro-organisms are abundant.

"The leptothrix masses consist of bundles of threads more or less parallel to one another, which run usually almost at right angles to the central core of epithelium. In some sections, however, long wavy bundles are seen running parallel to the long axis of the crypt. These masses are easily visible in sections stained in hematoxylin

and eosin, but are best differentiated in those stained with Lugol's solution and mounted in glycerin. The iodin stains the starch granules in the threads a deep bluish-black color, and the masses are readily distinguishable from the tissue, or from any other micro-organisms which may be present. In addition to the leptothrix there are masses of bacteria of various kinds, mainly short, rather delicate bacilli, along with clumps of flat epithelial cells and small mononuclear cells situated between the plug and the wall of the crypt. The epithelial lining of the crypt is rather thicker than normal. There is no excess of lymphoid cells in the epithelial wall, though these cells are abundant in the crypts, forming in places masses of considerable size between the plug and the wall of the crypt. In some cases the epithelial core of the plug is directly continuous at the bottom of the crypt with the epithelium of the mucous membrane.

"The patches on the surface of the mucous membrane of the tonsils consist also of flat plates of horny epithelium, to which are attached masses of leptothrix and bacteria. These epithelial plates are separated in places from the surface of the mucosa and in the interspaces, in addition to the masses of the alga, are seen loose, flat epithelial cells, lymphoid cells, an occasional leucocyte with polymorphous nucleus, and aggregations of bacteria. There are no marked alterations in the sub-epithelial tissues, or in the follicles of the tonsils. The *Keimcentra* show numerous mitoses, but apparently not more than are normally present in well-fixed tissues. The curious groups of distorted nuclei noticed at the periphery of some of the sections, and at certain spots in the interior, are probably to be attributed to the action of the alcohol. The case is undoubtedly one of the so-called pharyngo-mycosis leptothrica of B. Fraënkel (Aigosis faucium leptothrica of Jacobson)."

Treatment.—Tonic doses of iron, quinin and strychnin were ordered, and after the individual plugs were pulled out, chromic acid, fused on a fine probe, was applied to the interior of each crypt. The actual cautery was tried but found less satisfactory than the chromic acid. Four months after the commencement of treatment all evidence of the disease had disappeared. Various other methods of treatment have been advised. The consensus of opinion gives to the galvanocautery the first place. Ruault advises smoking ten cigarettes daily. Baber[1] recommends the local application of alcohol. Nitrate of silver and a whole host of antiseptics have been employed.

Inasmuch as it has been stated that an acid medium is favorable to the development of the spores, Hemenway[2] suggests that the use of the positive galvanic pole with a large negative cutaneous electrode should be more effective than cauterization.

Since this paper was written, pharyngo-mycosis has appeared on the tonsils of an adult sister of the patient, whose case is herein described, which would indicate the possible contagiousness of the disease.

[1] *Journal of Laryngology*, February, 1888.
[2] Medical News, Philadelphia, January, 1892.

CLINICAL LECTURE.

GASTRITIS GLANDULARIS CHRONICA.[1]

By PROF. FENTON B. TURCK, M.D.,
of the University of Chicago.

Gentlemen: In a previous lecture I called your attention to the principal etiological factors of chronic inflammation of the stomach, which are errors of living, diseases of other organs, and neuroses. To these must be added, as potent factors of inflammation, certain saprophytic germs and their toxins, the effects of which will be considered in the present lecture.

When any or all of the factors that I have enumerated have caused an irritation of the mucous membrane, exudation follows, and a sticky material accumulates upon the stomach wall. This material is made up of thick, tenacious, glue-like mucus, in which are found gland cells, leucocytes, food detritus, or remnants of food that are partly digested. The lack of churning power helps to cause retention of food particles. The material alluded to adheres to the gastric mucosa as a sticky mass. It is the best culture medium for the various germs found in the stomach that I have yet been able to procure. In drop cultures, by using this material as the nutrient medium, the stomach bacteria show rapid multiplication. My study has been limited to the pathogenic germs. The special conditions favorable to their growth are food and protection, and they grow better in a constant temperature, such as is maintained in the stomach.

The peptones and albumoses of the stomach are also found in this mucous bed. The gland cells and other epithelial cells contain a rich protoplasm, which is the best class of food, or culture soil, for these stomach bacteria. I have utilized this fact in my method of growing germs upon the sterilized mucous membrane of the stomach of pigs.[2] The hydrochloric acid of the gastric juice does not markedly interfere with the development of bacteria in this mass. The acid at first is even increased, as the germs multiply, owing to the irritation of the toxins of the growing colonies upon the stomach wall. Mucin not being freely soluble in water, the H_2Cl and HO do not penetrate the mucus sufficiently to destroy the colonies growing in such a rich soil. In cases of this kind I found that the acidity of the mucus was very faint; in other cases the reaction was alkaline or neutral. In ordinary process of digestion the HCl is not secreted, as a rule, unless food is taken into the stomach, when it forms syntonin and other fixed chlorides, so that two or three hours after food has been taken HCl is not, as the rule, found in the stomach. In every case where germs have been introduced into dogs' stomachs, after methods which I have before explained and which I will soon show, I have found evidence of the increase of HCl in the presence of growing germs which were formed upon the stomach wall,

The method I have pursued for obtaining this material from the stomach wall for bacteriological investigation is

[1] Lecture delivered by invitation of the Faculty and Trustees of the Jefferson Medical College, Philadelphia, February 10, 1896.
[2] See *Wiener medicin. Wochenschrift*, Nos. 1 and 2, 1895.

by the gyromele, which I have described elsewhere.[1] After the material has been removed from the stomach by this instrument, slides are made and stained and cultures are made, growing the germs on the mucous membrane of the stomach of a pig (sterilized by fractional sterilization at 60° to prevent coagulation of albuminoids). Bouillon made from the chopped mucous membrane of the pigs stomach forms a rich medium for cultures. Other nutrient media employed are gelatine, agar-agar, and boiled potatoes. These methods have the advantage of furnishing the natural habitat of the stomach bacteria. Cultures can be forced on the mucous membrane of the stomach as it does not melt at the same time, the liquefying germs are shown by little areas, when they liquefy. Many forms grow that do not grow at all upon ordinary nutrient media, and others grow better than they would under other circumstances. Finally, the mucous membrane can be dried and the colonies transported, if desired.

In experiments upon dogs, tannic acid is used every day for two weeks as an etiological factor. This "knocks out" the stomach and makes it a suitable field for germ culture. Now, if we put in the material taken from the walls of the stomachs of patients suffering with gastritis, the germs will grow; the soil has been prepared and the infection is produced. The results observed in the mucous membrane are that the gland cells become cloudy, leucocytes come to the surface, and the pathological picture of inflammation produced is identical with that found in cases of gastritis in the human subject. Material taken from the surface of the mucous membrane is examined, and also bits snipped off by Turck's nippers, designed for this purpose. The small wound left after taking away a small piece of the mucous membrane with this instrument will heal in 24 to 48 hours, leaving no evidence of the lesion.

As the germs grow then certain changes are observed, which appear to be due to the effects of the toxins. In order to settle this positively and learn what effect toxins have, I sterilized them as follows: In the morning, before breakfast, I withdrew the contents of the stomach, filtered through a Pasteur filter, and made the fluid germ-free. When sterile, I injected the fluid in doses of 1, 2, 3, up to 10 cc. to each 1000 grams of the animal. Rabbits at first were used, but subsequently I found common house rats better for the purpose, because they are not so large, are cheap, and can be watched just as well. The separation of the albumoses and peptones from the toxic proteoses of bacterial origin cannot be accomplished practically by chemical means. I have, however, taken advantage of the fact that coagulation of various albumoses takes place at different degrees below the boiling point (100° C.). By producing a vacuum over the filtered fluid taken from the stomach a rapid evaporation takes place, and by heating to 60° C., to 80° C., to 90° C., and up to 100°, various albumoses have been taken out which show marked difference in their effects when injected into the animal.

The normal stomach, when compared with an infected stomach, especially in cases of gastritis with marked dilatation, shows a wide divergence in toxicity of the secretions. In some cases, in the latter condition, 5 cc. has killed 1000 grams of animal when injected. There is also a difference observed depending upon whether the stomach has been cleaned out the night before or not. If the stomach has been washed and no food given, and the gastric fluid withdrawn in the morning, the fluid obtained is not so toxic in effect as in other cases where this procedure has not been followed. The employment of starch food instead of meat also lessens the toxic effect. The explanation of the latter observation is that the germs may grow and furnish a more potent toxin in the presence of albumin than in the presence of starch, or that the albumoses and peptones are more toxic than starch products. When no food at all has been given for twenty-four hours, cases of gastritis show the toxic effect of the injured stomach fluid.

Pathology.—The study of the pathological effect has been upon an artificial gastritis produced in dogs. The stomach of the dog, as before stated, is first treated with daily doses of tannic acid for two weeks, which produces a mild catarrh. The pathological condition allows the thick mucus to adhere to the walls of the stomach, where cells and remnants of food accumulate and in an adherent mass that forms a culture medium for germs. If now the material taken from the stomachs of patients suffering with gastritis is daily introduced, the phenomena of inflammation are rapidly developed; the symptoms observed are an increase in the production of HCl, the ferments become more active and the food is more rapidly propelled into the intestines. By the use of the gyromele, material is now removed from the stomach wall and the material thus secured is subjected to examination. Microscopically, the slides show leucocytes, a few gland cells, and food detritus in a bed of mucus. I now show you one of the dogs, which I have brought with me in the first stages of gastritis. The condition may be studied through a permanent fistula, which I am in the habit of making in a peculiar manner. I make a valvular opening in the anterior wall of the stomach, by following the mucous membrane in such a way as to make a valve similar to the ileocæcal valve, so that when a speculum is introduced and a small electric lamp, the whole of the interior of the stomach can be inspected. No leakage takes place at other times, as the valvular fold of the anterior wall prevents the escape of the stomach contents. This I consider the most useful method of operating for gastric fistula. I have performed the operation twice in the human subject for carcinoma of the esophagus.

On examination of the dog's stomach in the first stage of artificial gastritis, the stomach shows, here and there, accumulations of mucus and other material upon its walls. At the points not covered there is hyperemia, as shown by a red coloration of the surface.

I have divided chronic inflammation of the stomach, or gastritis, into three stages for the sake of convenience. Many times the changes characterizing the three stages have been observed in the same animal; but it is better to have some system in describing the morbid appearances. In order to examine the mucous membrane microscopic-

[1] International Medical Congress at Rome, 1894. *Wiener Med. Woch.*, Nos. 1 and 2, 1895; *Journal of the American Medical Association*, March, 1895, and *New York Medical Journal*, October, 1895.

ally, to learn the pathogenic changes that take place, it was necessary to secure pieces of the affected mucous membrane from time to time and observe the progress in the inflammatory change. Formerly, I made several laparotomies on the same dog, taking a piece of mucous membrane each time for examination; but many errors crept in. I accordingly devised this instrument which I call "Nippers," which passes down into the stomach through a tube, and when it arrives in the stomach, the nippers or pincers are exposed and a small piece of the mucous membrane is snipped off. This is then submitted to microscopic examination. It is found that the first change to be observed in gastritis is that the gland cells are enlarged and appear cloudy, also numerous leucocytes are noticed at the surface. But the evidences of inflammation are not so marked in this stage as in subsequent examinations, where the progress is more advanced. A far better idea is gained in the macroscopical examination with the electric light. The points especially to be noted are the accumulated mucus on the walls with the marked appearance of hyperemia. In the control dog (normal), a hyperemia occurs on the introduction of anything like a tube, into the stomach; the normal slate color changing to a light pink, but in inflammation, the mucous membrane becomes a bright red color.

After three or four months of this experiment of introducing infective material into a dog's stomach, more marked changes are observed. Not in every dog experimented upon, but in sufficient number to make it evident, there is a decreased formation of the HCl after a period of increased production of HCl. The food remains longer in the stomach, the dog does not eat with the readiness observed in the first stage, when the HCl is increased and the ferments more active. The dog then begins to emaciate. This thin animal that I have brought here to-night, shows this marked disassimilation, yet he is supplied with all the food necessary at regular times. The pieces of mucous membrane removed show more advanced cellular changes. The cells of the glands are so indistinct that they simulate a thick lining membrane. When a piece is secured from the pyloric extremity of the stomach, which is done by pushing the instrument along the great curvature, no distinction can be made, as in the normal condition, between central and parietal cells. Many of the cells are exfoliated, some show a fatty condition, and the specimen I have here, shows mucoid change. This mucoid change may be accounted for by the fact that the peptogenic cell is exhausted and can no longer secrete pepsinogen; but, as irritation continues, it produces mucinogen instead. I know of nothing in pathology of the stomach that makes such a beautiful picture. The cells look like a string of beads lining the glandular tubules, and when projected by the stereopticon, they look like little oval windows, like opals. The cystic degeneration of some of the glands and the mucoid metamorphosis of others, may account for the diminished production of the HCl and ferments. As the process continues, round cells that at first only appeared here and there, now congregate and multiply. The leucocytes entirely coat the surface. Cells become loosened and fall off; round-cell infiltration takes place with the formation of connective tissue, even down through the mucous coat. This part of the inflammation is what is mostly observed *post-mortem* and in advanced cases of gastritis. The earlier changes that I have observed are entirely lost in the *post-mortem* changes. In order to study these early changes the pieces of mucous membrane must be examined at once after their removal from the living tissue. Formalin is the best to preserve and harden the specimens; glycerin and water is also of value, and may be used.

At times, in the examination of patients suffering with symptoms of gastritis, small fragments of mucous membrane will come out in the wash water. On making slides from these pieces much valuable pathological information is gained. Changes similar to those that I show you in these specimens, of gastritis artificially produced in dogs, may be seen, corresponding to the different cellular changes in the stages of inflammation. The cells of the glands and the leucocytes find their way to the surface and accumulate in the bed of mucus adhering to the stomach wall. When my gyromele is introduced into the stomach, this material is removed by the revolving sponge. When I find the evidences of inflammation so marked in the material thus obtained for examination, I make the diagnosis of gastritis whatever other conditions may be present. The special points noted microscopically are the leucocytes, the altered gland cells, and the colonies of bacteria imbedded in the mucous bed.

In the study of inflammation of the stomach in the embryo it seems that the entoderm is far more sensitive to irritation than the ectoderm.

Gastritis glandularis chronica is an inflammation that appears the same as inflammation of any other part of the body, the only differences being the location and the peculiar manner in which infection takes place. By the decomposition of food and the growth of micro-organisms in the stomach poisons are produced which may be absorbed and produce local irritation as a general toxic effect, but this is not inflammation nor the direct factor or cause of gastritis. All errors of living, errors of diet, decomposition of food, etc., may be and are powerful etiological factors in producing inflammation of the mucous membrane. Any agent that irritates or changes the mucous membrane, so that material adheres to the stomach wall and allows bacteriological growth to occur in this bed, is an etiological factor in gastritis. As the mucous cells and food detritus accumulate on the stomach wall, germs develop in colonies and form toxins which are freely discharged. Part of the toxins are taken up by the cells beneath, and two changes are observed at the beginning of the process: increase of functional activity and slight changes in the gland cells with migration of leucocytes. The increase of HCl and of the ferments, and increased muscular activity of the stomach are accompanied by hyperemia. The irritation being continued and constantly present; after a time there is exhaustion of the function, a decrease of HCl, or it is entirely absent; there is also diminished ferment production and muscular weakness. The organ becomes easily distensible and dilatation occurs. HCl

may yet be increased or diminished, but as the process progresses there is gradually loss of all function, and, if no stop or change is produced in its course, the inflammation goes on to atrophy and total loss of digestive power.

I have secured a great variety of stomach bacteria in my studies of cases of gastritis, and I can say that it is not the presence of two or three germs that decides inflammatory change, but the group of micro-organisms found in the stomach. When these groups of stomach bacteria, pathogenic or non-pathogenic, colonize in the rich soil found in the mucous layer adhering to the stomach wall, they form toxins, which produce both the functional changes and the pathological phenomena of inflammation. The ability to find these products on the walls with the gyromele has enabled me, by cultivation and experiment, to clear up a few of the mysteries of "Catarrh of the Stomach."

CLINICAL MEMORANDA.

THE CLINICAL STUDY OF FOUR CASES OF INSANITY TREATED WITH THYROID EXTRACT.[1]

By WILLIAM E. WRIGHT, M.D.,
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REPORTS upon the therapeutic value of the thyroid gland in the treatment of certain forms of nervous affections have recently been so favorable that one feels that he would be doing himself and his patients an injustice if he did not give the drug a fair trial, and draw his own conclusions as to its value. The beneficial effects of its action in some cases of myxedema can hardly be disputed. Perhaps the flattering results of its action in this affection has entitled the drug to the position it now holds as a therapeutic agent with the dermatologist, as well as the neurologist and alienist.

The theories of the function of the thyroid gland[2] are reported by Victor Horsley as follows:

First.—That it is for the purpose of preserving the contour of the neck.

Second.—That it acts as a mechanical cushion to protect the important vessels and nerves from compression effects exerted by the contracting muscles.

Third.—That it acts mechanically to support the larynx and improve the voice.

Fourth.—That it acts mechanically, and protectively causes anemia of the brain.

Fifth.—That it acts mechanically, and protectively prevents anemia of the brain.

Sixth.—That it manufactures some substance specially necessary to the integrity and proper functional activity of the central nervous system.

Seventh.—That it is directly a blood-forming organ.

Eighth.—That it is indirectly a blood-forming organ.

Ninth.—That it plays an important part in the metabolism of the sex-organs.

Tenth.—That it modifies or destroys substances which, circulating in the blood, are harmful to the general economy.

From this list of its functions it would seem that the gland plays a more important part in the human economy than has heretofore been accredited to it by physiologists. The drug has been given a trial by many hospital physicians, both in this country and abroad, but to Dr. Louis C. Bruce, Assistant Physician, Royal Asylum, Edinburgh, is due special praise for his careful observations and report of "Thyroid Feeding in Insanity."[1]

It was my good fortune to be serving as clinical assistant on the staff of Royal Asylum, Edinburgh, at the time of some of his experiments with the drug, consequently I was afforded the opportunity of carefully observing the effects of it and noting the results upon the mental affection. Dr. Bruce reports the following cases with the following results, viz:

Three Cases of Acute Mania, All recovered.

Four Cases of Acute Melancholia, Two recovered, one relieved, and one not improved.

Three Chronic Cases, Mania drifting into dementia, of over one year's duration. One male relieved.

Two Cases of Chr. Melancholia, One female of over four year's duration, discharged relieved. One female of over two year's duration, discharged recovered.

One Case of Syphilitic Insanity, Not improved.

One Case of Alcoholic Amnesia, Not improved.

Four Cases of Puerperal Insanity, Three recovered after one course of treatment. The fourth recovered after the second course of treatment.

Two Cases of Lactational Insanity, One of over five month's duration, recovered. The other of over two year's duration, not improved.

Three Cases of Climacteric Insanity, All recovered.

Two Cases of General Paresis, One temporarily improved, the other relieved.

This is certainly a most brilliant showing and justifies a trial of the drug by every one who has to treat the insane.

Dr. Bruce's cases encouraged me so much that I was full of hope, and I came home with the determination of giving my patients the benefit of the experiment.

Four cases were selected. Cases of tardy convalescence inclined to pass into a state of dementia. Two were over one year's duration, and two were under six month's.

The patients were weighed and put to bed, their temperature and pulse rate were observed morning and evening. No restriction in diet was made. About the fourth day after being in bed a five-grain tablet of thyroid extract was given. The second day two tablets were given, and the third day three, and so on until patient received three tablets or fifteen grains of the drug three times daily. Not until this dose was reached was there a noticeable reaction. It is well here to note that the temperatures of patients had been running 97° to 98° before the drug was given, and pulse was not above seventy-five in any case, and in one was as low as fifty per minute. At this dose there was a slight feverish reaction. Temperature running from 90° to 100° at times.

[1] Read before the Harrisburg Academy of Medicine, February 28th.

[2] *British Med. Jour.*, January 30, 1895.

[1] See *Journal Mental Science*, January, 1895.

The most noticeable effect was observed in the pulse rate, which was quickened, sometimes irregular and generally without tone. This was considered the key to the full physiological effects of the drug, and when the pulse became atonic and irregular the drug was discontinued. In each case the drug was administered about six or seven days after the dose of fifteen grains three times daily had been reached. At this point the drug was discontinued though patients were still kept in bed, as at this stage the treatment had produced rather an exhausted state and the danger of heart failure was to be considered. As soon as it was prudent (generally the fourth or fifth day) the patients were permitted to get up, were again weighed and permitted to mingle with the other patients on the hall. No other medicine had been given during the treatment with the thyroid, save mild laxatives in one case. After the drug was discontinued, patients were all given tonic treatment in some form, with egg-nogs and other extra articles of diet, with the view of stimulating the appetite and increasing the nutrition.

Case I.—W. M., male, age 61. Melancholy, with suicidal tendency. Takes food very reluctantly, and is very emaciated. Weight 120 pounds. Temperature 97°. Pulse 50. Treatment outlined above was carried out, the extract being administered for nine days, and ten weeks later it was noted that, with the exception that patient takes his food better, there is no noticeable change produced in his condition by the action of the thyroid. Weighs 120 pounds.

Case II.—M. G., male, age 30. Hereditary predisposition. Melancholia of one year's duration. Is suspicious, and practices masturbation. Very thin; weighs only 115 pounds. Takes food reluctantly. Temperature 98°. Pulse 60. The thyroid extract was taken for sixteen days by this patient, and ten weeks later the following note was entered: Takes his food better. Weighs 112 pounds. The increase in appetite is the improvement to be noted in his case. Mentally there is hardly any change.

Case III.—G. D., male, age 21. Hereditary predisposition. Case of mania. Restless, disorderly, quarrelsome, and practices masturbation. Weighs 137 pounds. Temperature 98°. Pulse 70. Patient was sent to bed and the thyroid extract given for eight days in all, but very little reaction was observed. Ten weeks later the patient is more orderly and less destructive. Is less quarrelsome, and keeps himself in better shape than he did. Weighs 136 pounds. His condition can be classed as improved.

Case IV.—M. Z., male, age 22. Hereditary history on both sides. History claims that he had been maniacal and destructive at his home, though patient was in a stupid state and refused food when he was received into the hospital. For two days he refused food, and was fed with a nasal tube. Later he is recorded as being dull and stupid, and growing more demented. Patient is sent to bed. Pulse 70. Temperature 97°. Weight 135 pounds. Extract administered for thirteen days, and ten weeks later patient was very much brighter. More tidy in habits, and helping to do ward work. Decided improvement.

While the results of the experiment are not so favorable as I had wished for, still I think that all of the patients are in a way better for having received the drug. Increased appetite and power of assimilating food is certainly marked, and this, in a certain class of cases, is a gain. This, however, may be due to the after-treatment with tonics, stimulants, and extra articles of diet; but this treatment, given before the administration of thyroid, did not produce the increase which is to be found after the latter drug is given.

As the result of my observations, I give the following summary:

1. That the drug produced a decided reaction in all the cases, as is shown by the feverish state and quickened pulse.

2. That the patients lost in weight and became quite feeble during its administration.

3. That the patients developed an increased desire for food, and gained in weight as soon as the drug was discontinued.

4. That the effect upon the mental state is so slight as to hardly justify the period of time and inconvenience to patient of confinement to bed and the risk incurred by the administration of the drug.

ACETANILIDE AS AN ANTISEPTIC IN CHRONIC SUPPURATIVE OTITIS.

By LEWIS S. SOMERS, M.D.,
of Philadelphia.

Acetanilide, phenylacetamide, or, as it is commonly called, antifebrine, has been used for a number of past years as an antipyretic and analgesic. In 1893 Harrell[1] called attention to its use in suppurating wounds, and reported a number of cases in which it was used with excellent results. Later, Morton[2] reported one thousand miscellaneous surgical cases in which it was substituted for iodoform and found superior to the last-named drug. Morton mentions one case of head injury, with aural hemorrhage, in which he packed the external canal with the pure drug. Allen[3] relates one case of chronic suppurative otitis treated with acetanilide, cure resulting in a very short time. Referring to the *Surgeon-General's Catalogue* and the *Index Medicus* for references relating to the use of acetanilide in chronic suppurative otitis media, I find the drug, as used for that purpose, conspicuous by its absence, no reference being given to any article on the subject. I therefore feel justified in recording the cases and results of its use as embodied in this preliminary report.

Believing thoroughly that a suppurative ear should be treated on the general lines of antisepsis and asepsis, as taught by our modern medicine, it seems a logical conclusion that moisture (*i.e.*, permanent instillations of liquids into the canal and middle ear) should be avoided, not only that fluids macerate the delicate structure with which they come in contact for varying periods of time, but also form a nidus favorable to bacterial growths, thus setting up secondary infection in an ear already the seat of a morbid process.

[1] Harrell, Medical News, Vol. 63.
[2] Morton, *Trans. Phila. County Medical Society*, 1894.
[3] Allen, *Cotex Medicus*, Vol. I.

Based on these principles, it is therefore a desideratum to find a suitable dry application that will protect the inner ear, render it aseptic, will not irritate, and, finally, not form hard, insoluble masses or be absorbed by the system, with deleterious results. In the small number of cases reported in this paper, acetanilide apparently fulfils the objects desired. It is neutral in reaction, odorless (this one point alone renders it far superior to iodoform), non-irritating, to a greater or less extent soluble in the purulent discharge, and does not form lumps or cake. To a moderate degree antiseptic, and acting as it does, by clinging to the mucous membrane, thereby forming a coating, preventing extraneous germs from gaining access to the ear. When used as a pure powder, without dilution, it sometimes causes slight pain and a stinging sensation, and to obviate this a powder is best made of equal parts of acetanilide and boric acid, which does not produce pain and causes no abnormal aural sensation. Another factor, although a minor one, which is not without value, especially in hospital use, is the low price of the drug, and, as very little is used on an individual case, the per capita cost is reduced to a fraction of a cent.

Acetanilide is but one part of the treatment of suppurating middle ear disease; important, but to insure success, a number of additional points in the treatment must be strictly adhered to. The routine treatment used on the cases reported in this paper was a follows: The aural canal and middle ear were thoroughly cleansed of pus and debris (as epithelial cells, extraneous matter, and cerumen) with a fifteen-volume solution of hydrogen peroxide, the pus in the canal being easily removed with a tuft of cotton on an applicator. Frequently, to remove the products of suppuration from the middle ear, a delicate syringe was used, and all parts of the ear covered with the discharge were rendered as antiseptic as possible. Necrosed bone being removed with forceps and curette, and polypi or granulation tissue thoroughly removed with the snare, nitrate of silver or chromic acid. Bleeding being controlled with alcohol, the acetanilide powder was then blown into the canal so as to cover its entire floor with a fine film, extending on the membrana tympani to the lower portion of the perforation. A very important point in the use of any powder in the ear is to use but a minimum quantity and to avoid obstructing the opening in the drum, as it is nature's method of evacuating the pus. Very frequently, if this point is neglected, the products of suppuration will be unable to escape externally and, as the Eustachian tube is often glued together by inflammatory products, the pus, endeavoring to discharge in the direction of least resistance, will invade the mastoid cells and set up a mastoiditis. As the streptococcus and staphylococcus readily find entrance through the Eustachian tube and infect the middle ear, particular attention should be paid to the nose and naso-pharynx. Every case, therefore, was thoroughly cleansed with an alkaline antiseptic solution, a modification of "Seiler's solution" being found most agreeable. All abnormal changes in both throat and nose were removed and, as far as possible in such exposed organs, antisepsis was maintained. This treatment, being based on common-sense principles, cannot fail to produce good results, as it always has in my hands, both with and without the use of acetanilide.

The patient is instructed to avoid self-treatment of the ear, and especially not to use a syringe or insert a cotton plug, as is very frequently the case, always with deleterious results in a large majority of instances. In cases with the disease of long standing and a profuse mucopurulent discharge, instructions are given to clean the external ear with castile soap and warm water, using for that purpose a clean piece of linen, and immediately destroying it, thus never using the same piece of infected material over again. Previous to the use of acetanilide as a dusting powder, the routine method of treatment as above outlined was always used, with the exception that an impalpable boric acid powder was used in its place. But results were frequently disappointing, the suppuration continuing to exist in spite of all endeavors to effect a cessation.

The cases treated by this method are reported somewhat in detail, so that the extent of the otitis and the results obtained by the use of acetanilide may be better appreciated:

Case I.—A. N., age 10 years. Admitted to the clinic of the Union Mission Hospital December 26, 1893. Right ear has been suppurating for several years. Tympanic membrane entirely absent. Regular treatment of no avail for one year previous. Otitis cured in three months with acetanilide. No return at present time.

Case II.—C. S., age 14 years. Admitted April 14, 1895. Both ears suppurating. Total cessation of discharge in three months.

Case III.—S. C., age 46 years. Admitted May 23, 1895. Left ear suppurating and tympanic membrane destroyed. Cured in five weeks.

Case IV.—W. D., age 11 years. Admitted April 16, 1895. Both ears suppurating irregularly for the past ten years. Both membrana tympani absent. Cured in ten weeks.

Case V.—C. S., age 24 years. Admitted May 7, 1895. Suppuration on right side. Perforation embracing lower segment of membrana tympani. Cured in three visits.

Case VI.—I. L., age 3 years. Admitted May 13, 1895. Right ear suppurating for past three months, caused by scarlet fever. Cured in two visits.

Case VII.—M. L., age 5 years. Admitted May 15, 1895. Sister of Case VI. Left ear suppurating for past three months, following scarlet fever. Cured in five visits.

Case VIII.—M. McE., age 2 years. Admitted May 16, 1895. Right ear suppurating since he was nine months old. Cured in one application.

Case IX.—W. F., age 39 years. Admitted September 10, 1895. Left ear suppurating for past two weeks. Drumhead entirely absent, except Shrapnell's membrane. Cured in three visits.

Case X.—P. F., age 9 months. Admitted May 25, 1895. Left ear suppurating. Cured in three weeks. Previous to this he suffered from a mastoid abscess on the left side, which was operated on by Dr. Isaac Leopold.

Case XI.—J. K., age 15 years. Admitted May 25, 1895. Left ear suppurating. Cured in four weeks.

Case XII.—K. B., age 17 years. Admitted June 1, 1895. Both ears suppurating. Cured in six weeks.

Case XIII.—T. T., age 31 years. Admitted June 1, 1895. Left ear suppurating for past twenty years. Cured in eight weeks.

Case XIV.—G. L., age 16 years. Admitted August 16, 1895. Left ear suppurating for past year. Membrana tympani shows double perforation in posterior inferior quadrant. Cicatrix on right membrane from previous myringitis. Cured in three weeks.

Case XV.—I. T., age 14 years. Admitted August 24, 1895. Both ears suppurating since early childhood. Left membrana tympani absent, except a portion of Shrapnell's membrane. Right side shows total absence of drumhead; both oval and round windows easily distinguished. Cured in one week.

Case XVI.—A. W., age 7 years. Admitted August 3, 1895. Left ear suppurating, discharge commencing soon after birth. Small perforation of drumhead below umbo. Cured in four weeks.

Case XVII.—H. S., age 30 years. Admitted October 20, 1895. Intermittent suppuration of left ear since early childhood. Entire posterior segment of drumhead destroyed. Cured in one application.

Case XVIII.—J. S., age 6 years. Admitted August 1, 1895. Left ear constantly suppurating for the past three months; previous history of irregular discharge. Entire membrana tympani absent. Cured in three months, with formation of new membrane.

Case XIX.—C. R., age 11 years. Admitted October 1, 1895. Left ear suppurating for several years. External auditory canal filled with bleeding granulations. After these were removed the tympanic membrane showed a large perforation embracing its posterior half. Cured in seven weeks, with formation of new membrane.

Case XX.—L. W., age 8 years. Admitted October 12, 1895. Both ears have been suppurating for the past year. Left tympanic membrane shows lenticular perforation of Shrapnell's. Right shows a large inferior perforation, involving lower two-thirds of drum. Cured in one week, with formation of new membrane.

Case XXI.—C. R., age 16 years. Admitted September 2, 1895. Left ear suppurating for one month. Tympanic membrane swollen and edematous in superior half. Medium-sized perforation of lower posterior quadrant. Cured in three weeks.

Case XXII.—J. B., age 39 years. Admitted October 10, 1895. Right ear has been suppurating for the past three days. Septic dermatitis of external auditory canal and catarrhal inflammation of Eustachian tube. Small perforation over attachment of manubrium to membrane. From the amount of destruction present, the disease had very probably existed for several years, but owing to the ignorance of the patient, a definite history was not obtainable. Cured in one month.

Case XXIII.—K. S., age 21 years. Admitted September 21, 1895. Pus has discharged from the left ear irregularly for the past five years. Absence of membrana tympani. Large bunch of granulations occupying location of posterior inferior segment of drum. Cured in two months.

Case XXIV.—F. G., age 9 years. Admitted November 30, 1895. Intermittent purulent discharge from right ear for several years. Large circular perforation of anterior inferior quadrant of membrane. Cured in three weeks.

Case XXV.—W. F., age 10 years. Admitted December 10, 1895. Pain in right ear one week ago, followed by a purulent discharge. No previous trouble with ears. Membrana tympani boggy and congested, with a small perforation of the anterior inferior quadrant. Cured in one visit.

Case XXVI.—M. K., age 28 years. Admitted November 13, 1895. Intermittent suppuration of both ears for the past five years. The left membrane shows a large central perforation, almost involving the entire drumhead, with congestion of Shrapnell's membrane. Right side shows a small annular perforation of anterior inferior quadrant. Cured in three weeks.

Next to acetanilide, boric acid is undoubtedly of more value than any powder now used in chronic suppurative otitis media. With the last-named drug, and without detailing cases from clinical reports and my own experience, it has usually taken on an average of thirty applications to the ear to cure the diseased process. The word cure is used advisedly, as in a certain number of cases suppuration will occur at irregular intervals, usually from tubal infection, due to coryza and pharyngitis, and in the class of patients seen in hospitals from unhygienic surroundings and lack of care of the ears, especially in children among the poor.

In the series of cases reported above, an average of twelve treatments was sufficient to remove all evidence of discharge, thus making a very material decrease in the treatment rate. Applications were made three times a week, so the average course of treatment extended over one month, instead of from three to five, as is usually the case when treated with other applications. The longest treatment extended over a period of three months, while in several cases one application was sufficient to produce a satisfactory result. From the history of the duration of the disease, it was found that the longest period of existence was twenty years, while the shortest was but three days' duration, giving an average duration of very nearly three years. The average age of the case at beginning of treatment was 16½ years, the youngest being 9 months and the eldest 46 years.

MEDICAL PROGRESS.

Intra-uterine Transmission of Vaccinal Immunity.—At a recent meeting of the Académie de Médecine Ausset (*Bull. de l'Acad. de Méd.*, 1896. No. 3. p. 51) communicated a report of the case of a man, 27 years old, who had been vaccinated several times without success—once during infancy and twice at the age of 20 years. The fourth attempt, at the age of 27, was followed by the development of characteristic lesions. It appeared upon in-

quiry that the individual's mother had suffered from an attack of variola during the pregnancy (the exact period could not be ascertained) but the patient presented no lesion of the disease. It seemed, therefore, probable that his resistance to vaccination was due to the protective influence of substances that passed from the mother to the fetus through the placenta.

Prolapse of the Uterus and Vagina in a Nullipara.—CHOLMOGROFF (*Wratch*, 1895, No. 49, p. 1370) has reported the case of a woman, thirty years old, who had never been pregnant, but who presented complete prolapse of the uterus of three years' duration. Menstruation appeared first at the age of sixteen, and had always been regular, but painful. The uterus was entirely external to the vulva, was increased in size, and was easily replaced. The external orifice was open and surrounded by a suppurating erosion. Cystocele and rectocele existed. Urination was easy and painless. On auscultation, râles were heard at the apices of the chest; expectoration was abundant, and consisted of mucus sometimes sanguinolent. Sweats occurred at night, and cough was obstinate, especially in the morning. After reduction of the uterus a glycerin tampon was introduced, and renewed hourly for six hours. After a time a long and broad strip of the vaginal wall was removed, and the cut edges approximated by sutures. A month later hysteropexy was practiced, and the result was entirely satisfactory. The woman, however, returned to her work, which consisted in lifting heavy weights, the pulmonary symptoms became more aggravated, and in the course of six months the prolapse had returned.—*Presse Médicale*, 1896, No. 13, p. 78.

Bilateral Ovarian Cystomata in Three Sisters.—As a contribution to the subject of the hereditary transmission of ovarian cystomata, LOHLEIN (*Monatschrift für Geburtshülfe und Gynækologie*, 1896, B. III, H. 2, p. 91) reports the cases of three sisters, all of whom presented cysts of both ovaries, which were removed by operation. Olshausen, who has probably enjoyed the largest experience of similar nature, has reported the cases of three sets each of two sisters, in which he has operated for the removal of ovarian cysts upon one side.

Osteoplastic Restoration of the Metatarsus.—CRAMER (*Centralblatt für Chirurgie*, 1896, No. 5, p. 99) describes a mode of operative procedure adopted by Prof. Bardenheuer in the restoration of a defect caused by the removal of the third metatarsal bone on account of disease. After removal of the diseased structure the adjacent second metatarsal bone is divided longitudinally by means of a chisel, but not through its tarsal extremity, whose relation with the middle cuneiform bone is preserved. The inner half of the divided bone is then deflected into the place of the removed third metatarsal bone, and to its distal extremity the first phalanx of the third toe is attached. The operation has been successfully performed in a case of tuberculous caries in a boy six years old. The joint between the tarsus and the metatarsus was not opened. The interval between the second and the fourth metatarsal and between the two parts of the second were packed with gauze. At the end of four weeks the child was dismissed and given permission to stand on the foot and to walk after two weeks more. Five months after the operation the boy was able to move the affected foot freely, and the member was well-formed and like its fellow. The operation is similar to that which has already been employed in the correction of congenital defect of one of the bones of the forearm or leg, and is applicable to other conditions of an analogous character.

Successful Treatment of Dracunculus Medinensis by Injection of Mercuric Chloride.—MANSON and BOYD (*British Journal of Dermatology*, 1896, No. 2, p. 38) have reported the case of a Lascar, forty-two years old, who presented a projection from a small sinus just above the left external malleolus, which was found to consist of some two inches of guinea-worm, and which was wound upon a stick. The protruding piece of worm was cut off, and the fluid contained in the proximal extremity examined, without, however, finding living embryos. This extremity became retracted within the sinus and could not be drawn out. The trickling of cold water over the leg from a sponge failed to cause exudation of embryo-laden fluid, and it was therefore concluded that the worm was empty. After three days of simple dressing without result, an Esmarch bandage was applied as a tourniquet above the malleoli, and an incision an inch long made over an elongated low swelling, about 1½ inches in extent, situated two inches above the mouth of the sinus. At once an opaque white cord about one-sixteenth inch in diameter, was seen at the upperend of the wound. This was pulled out with a hook, and presently the dried end of the worm appeared. By careful traction, about four inches of the length of the parasite was thus withdrawn. This portion was a thin-walled, but strong, empty tube. Into the buried portion of the worm was injected 1–1000 solution of mercuric chloride, but this penetrated only a short distance. Some of the solution was also injected into the tissues about the mouth of the sinus. The worm was cut off as high as possible, and the wound closed. In eight days the wound had healed entirely, without general or local reaction.

Hemiparesis and Gangrene of the Forearm in the Sequence of Extirpation of the Uterus.—At a recent meeting of the Royal Society of Physicians of Vienna BRAUN (*Wiener klinische Wochenschrift*, 1896, No. 5, p. 74) related the case of a woman, sixty years old, in which immediately after vaginal extirpation of a carcinomatous uterus, there were noticed paresis and a livid discoloration of the right hand and forearm, and of the right lower extremity. The operation had been performed with the patient in the usual position, and examination of the heart had disclosed no lesion. In the course of a few days the arm became livid, and pulsation could not be felt in the corresponding axillary and brachial arteries. The bodily temperature fell below normal. The vascular conditions in the lower extremity gradually improved, while those in the upper grew progressively worse. Amputation of this member was deferred until some indication of the limits of the gangrene should manifest itself. Paresis also ap-

peared on left side of the face, and the palsy of the lower extremity became complete. On several occasions a fatal issue threatened, but each time the patient rallied. Power gradually returned in the palsied members and a line of demarcation formed in the right forearm, so that at the end of three months amputation was performed without anesthesia and without pain.

In the discussion Weichselbaum, to whom the amputated member was referred, stated that the probable explanation of the course of events depended upon the detachment of calcareous fragments from the walls of the atheromatous vessels and their lodgment in the left sylvian artery and in the arteries of the right arm.

Cerebral Traumatism and Dipsomania.—At a recent meeting of the Medico-Legal Society of Paris Vallon (*Presse Médicale*, 1896, No. 13) reported the case of an officer in good health and of good habits and good family history, who was thrown from his horse, one foot being caught in its stirrup, and dragged for a considerable distance, his head striking the ground. The man suffered an extensive wound of the nucha and was unconscious for three days. At the end of three months he returned to his regiment in apparently good health, complaining only of ringing in the ears. Subsequently he had an attack of uncertain nature in which he fell and lost consciousness. It was now noticed that the man displayed an entire change of habits, indulging in alcohol to intoxication and suffering from a veritable mania of thirst; he was besides erotic and manifested a tendency to suicide. This condition continued, the man going from bad to worse.

A New Method of Treating Wounds Antiseptically.—Schleich (*Therapeutische Monatshefte*, 1896, No. 2, p. 57) has found that when a watery solution of gelatin is evaporated over formalin-vapor a new product results, which is hard, transparent, and resistant to ordinary influences, such as heat, moisture, alkalies, and acids, and which is chemically inactive. Experiment showed that when this formalin-gelatin was introduced into the peritoneal cavity of animals it was in part digested and surrounded by new-formed connective tissue. The introduction into wounds of pathogenic bacteria, together with powdered formalin-gelatin was unattended with infection, thus proving that the formalin set free exerted an antiseptic influence *in loco*. The observations were extended to human beings, with the invariable avoidance of suppuration, except in the presence of necrotic tissue (as from ulceration) and of specific infections (such as tuberculosis or syphilis). When from the presence of necrotic tissue, deposits or secretion, healthy cells were prevented from coming into contact with the formalin-gelatin and setting free formalin, this was effected by means of a solution of pepsin (5 parts) in hydrochloric acid (0.3 part) and distilled water (100 parts). Formalin-gelatin is prepared by the addition to 500 grams of purified gelatin in solution 25 drops of pure formalin solution and evaporating over formalin-vapor. The resulting solid body is reduced to powder and preserved in the presence of a drop of formalin solution. Impregnated with lime-salts, formalin-gelatin is capable of taking the place of defects in bone.

THERAPEUTIC NOTES.

The Treatment of Tetany with Thyroid Extract.—Levy-Dorn (*Therapeutische Monatshefte*, 1896, No. 2, p. 63) reports a case of idiopathic tetany of three years' duration in a woman 21 years old, which, after resisting varied treatment, yielded upon the administration, over a period of nearly four weeks, of four grains of thyroid extract at intervals of one, two, or three days.

Styptic in is a yellowish, bitter powder, readily soluble in water, the results of whose employment in gynecological practice Gaertig details in the *Therapeutische Monatshefte*, 1896, No. 2, p. 71. The drug chemically resembles hydrastinin, and is the chloride of cotarnin—a base obtained by the oxidation of narcotin. It was at first used in powder-form in cachets, later in a solution of which 10 drops represented gr. ¾, and finally in the form of perles. At first gr. ¾ were given twice daily, subsequently the same dose four times daily, and finally increased to eight times in the twenty-four hours. No influence upon uterine contractions was observed, so that any hemostatic action possessed by the drug is attributable to some other cause. The medicament was employed in cases of uterine hemorrhage of varied origin and proved serviceable in the larger number, equalling in efficiency hydrastinin, than which it is cheaper.

The Treatment of Scarlatina with Anti-Streptococcous Serum.—Marmorek (*Annales de l'Institut Pasteur*, 1896, No. 1, p. 1) details the results achieved in the treatment with anti-streptococcous serum, of ninety-six cases of scarlatina at the Hôpital Trousseau from October 16 to December 31, 1895. Seven additional cases coming under observation during this time were not treated with the serum because of the lateness of the disease. One of these presented a nephritis of three weeks' standing and remained under observation for two months without progressing to recovery. Two sisters of this child, who were attacked later, were treated with serum and recovered without complication. In all of the ninety-six cases streptococci were found, alone or in association with other micro-organisms. In seventeen cases diphtheria-bacilli were present. Four of these presented symptoms of diphtheric intoxication and died, notwithstanding treatment with both the anti-streptococcous and the anti-diphtheric serum. These children had been several days without treatment. One other child died as a result of bilateral pneumonia. All of the children received at first a dose of 10 c. cm. of the serum. The dose was doubled if the general condition appeared grave. In addition only antiseptic lavage of the throat was employed. The injections were repeated daily until the temperature became normal. Ordinarily two injections proved sufficient. When complications, such as adenitis, otitis or albuminuria appeared, the injections were resumed, and continued until the normal condition was restored. No bad effects were observed from the use of the serum. It influenced only the complications due to streptococci.

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SATURDAY, APRIL 4, 1896.

THE PLAYFAIR INCIDENT, AND THE SACREDNESS OF PROFESSIONAL CONFIDENCES.

NOTHING has happened in recent years to direct attention so sharply to the responsibility of the physician, in his confidential relation to his patients, as the verdict of $60,000, in an English court, against Dr. Playfair, the celebrated obstetrician, of London. The circumstances, as reported in the daily press, are that Dr. Playfair was called in consultation by the family physician of a lady who was ill. This lady's husband had been in Australia for about one year. Whatever the condition was, Dr. Playfair was led to believe that the lady had not been a faithful wife. She, being his own wife's sister-in-law, he accused her of infidelity, and reported the matter to his wife, warning her that the patient was not a proper person for her to associate with.

This led to the lady being cut off from her annual allowance from her father-in-law of $2500 and to her practical ostracism from society. Then she sent for her husband, who staunchly believed in her honor and brought the suit which resulted in the vindication of her character and the recovery of damages for defamation of character to the amount of $60,000.

If the reports, as given in the daily press, are true, Dr. Playfair must look in vain for sympathy from his professional brethren. If the doctor's only intent was to protect his wife and family, he could have done it in some way without betraying his patient's confidence.

The physician stands in honor in exactly the same relation to his patients as the priest to those who confess to him. The priest receives and encourages this confidence on the mutual belief that it is for the confessor's spiritual good. The physician does the same on the mutual belief that it is for the confessor's physical good. One is as sacred as the other. The doctor learns his patient's ailment simply that he may treat it; but the remote influences of the moral and spiritual life of his patient has so great influence on the physical that it becomes sometimes necessary to make his confessional as far-reaching as that of the priest, and it, therefore, behooves the doctor to guard with zealous care not only the knowledge he may thus gain, but the very suspicion that he has it. On this point the Code of Ethics of the American Medical Association speaks with no uncertain sound. Section 2 of Article I says:

> The familiar and confidential intercourse, to which physicians are admitted in their professional visits, should be used with discretion and with most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician. The force and necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

In the account of the trial it is reported that Sir John Williams, physician to the royal family, declared that it was within the discretion of any of the 23,000 physicians in England, on his own responsibility, to disclose a secret without consulting the patient, if he deemed it his duty for the protection of his wife or family or in the case of a crime. This moved the Judge to inquire if he considered it the duty of a physician to inform the public prosecutor in case he found that a patient had submitted to an illegal operation.

Sir John replied that the College of Physicians had answered "Yes" to precisely that question. But Justice Hawkins tartly observed that if every medical man in the kingdom testified that he had a right to betray a confidence under certain circumstances it would not alter the law or his responsibility under the law.

A doctor is not a moral censor; nor can he consider it his duty to punish, by exposure and defamation, sins which he may have discovered in his professional confidences.

What view the law takes of this subject, in various parts of our country, is as difficult to ascertain as to know what regulations the different States have for the practice of midwifery and which are devoid of any. Doubtless the law here regarding the communication between physician and patient is about the same as it is in England. In New York State the Code of Civil Procedure declares:

A person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity.

In view of the outcome of Dr. Flayfair's experience, it may be well to remember that if a doctor reveals a professionally gained secret he does so at his peril.

THE MORAL ASPECT OF THE TENEMENT-HOUSE QUESTION.

A good deal has appeared lately in lay and medical periodicals upon the subject of the tenement house and the "rear" tenement house in particular. It is known by most readers that, in the thickly crowded districts of all large cities, in what should be the back yard of the house that fronts the street, another house is erected, connected with the street only by a narrow, covered passageway leading through the front house. This is the "rear tenement" about which we hear so much and which is credited with being the hiding and breeding place of so much disease, vice, and crime. No thinking person can for one moment deny that the *proper housing* of an urban population is for them the most important problem. If overcrowding simply meant disease and death to a large percentage of those overcrowded, the reformer might simply deplore the loss of life in a philosophical way. But disease and death are trifles compared with other dangers from which thoughtful persons recoil with horror. We refer here to the moral side of the question.

The home is the bulwark of our civilization, but the word "home" is not in the vocabulary of the tenement house, and, as eight-fifteenths of our city population so live, they know not the meaning of the word. Defined by a rat, home means one thing; by a civilized human being it means something more—an abode furnishing the comforts of domestic life. These comforts are sunlight, an abundance of uncontaminated air, a sanitary water-closet, a bath-tub, and enough rooms to secure privacy. An abode not having these modest amenities of civilization is not a home, be it a squalid rear tenement or a "flat." In the poor tenement sunlight is almost unknown; the air is only a fraction of the legal 600 cubic feet per tenant, and is contaminated by foul odors and deadly emanations.

The New York Tenement-house Committee reported in 1894 that in one block of 2,000 tenants there was not a single bath-tub, and the secretary of that committee reports that of a population of 255,033 inspected, only 306 persons had access to bath-rooms in the houses in which they lived.

But, as here contended, lack of sunshine, air and cleanliness, and consequent disease and death, count as naught. The moral is the greatest danger, and the lack of privacy is the most damnable feature of the tenement. In the better class of tenements there is a front or sitting-room, having perhaps two narrow windows looking on the street, a back room, generally used as a kitchen, with a window or two, and between the two rooms are two more, unlighted and unventilated except through the front and back rooms, serving both as bedrooms and as a passage-way from kitchen to sitting-room. In these rooms a father and mother and several children, perhaps grown, cook, eat, dress and undress, bathe, sleep, live in health and sickness, and die. Under the most favorable circumstances such a life is not conducive to modesty, and if purity and morality survive it is a marvel. Shift the scenery a little and in the same rooms imagine a drunken father or mother, or both, children of an impressionable age, and perhaps a boarder or two to take a hand

in the frequent brawls or debauchery, and the vision of the tenement house as a nursery for future citizens begins to take shape. But instead of four rooms, suppose there is one, partly below ground, dark, damp and noisome, and suppose this the only abode of a family or of several adults of both sexes, with children, and you have a true picture of how many city dwellers live. An abode where marital acts or promiscuous relations of the sexes are open, where drunkenness, lewdness, and crime go hand in hand, presents a problem that should be met and solved.

It is futile to appeal to the humanity of the landlord, for he is the exception who voluntarily tears down a rickety house yielding twenty-five per cent. and puts up a sanitary tenement yielding ten per cent. It is useless to look for reform to the tenants themselves, stolid and morally benumbed as they are. As long as unfit habitations exist they will find tenants, and there is only one way to solve the problem and that is to invest the Board of Health with powers of expropriation.

When a tenement cannot be made a sanitary habitation or where a landlord refuses or neglects to make it so, the city should step in, pay the owner what the building is worth for old material, tear it down and leave, at least, a breathing space where before was a hotbed of physical and moral infection. If there ever was an excuse for the State to exercise its power of eminent domain, it is where its poor stand in need of light and air, which should be free to all; where vice and crime flourish because virtue and honesty are impossible; where the very existence of the State is threatened because a large part of its younger citizens, if they escape disease, fall victims to a social rot.

OPHTHALMOLOGY.

A CRITICAL RESUME OF RECENT PROGRESS.

Herbert Burnham, M.D. (*Arch. of Ophthal.*, Vol. XXIV, No. 3, p. 407), reports the use of pilocarpin in connection with the iodide of potash and mercury, in the treatment of an obstinate case of syphilitic iritis, in which the prolonged use of atropin, mercury, and the iodide of potash had been of little avail. The sulphate of pilocarpin was used hypodermically in the dose of $\frac{1}{8}$ grain once a day, and gradually increased to $\frac{1}{4}$ of a grain. The injections were given daily for three weeks, when not contra-indicated by excessive nausea or by weak heart action.

An interval of two or three weeks was then allowed to pass, and the treatment repeated. The mercury and potassium were continued without intermission. Under the treatment the inflammatory condition gradually subsided, the synechiæ disappeared almost entirely, and the otherwise intractable diseased condition passed on to recovery.

Dr. Burnham intimates that as the addition of pilocarpin to the mercury and potassium, in the treatment of this case of syphilitic manifestation, proved so valuable, it may also be of similar value in the treatment of obstinate syphilitic affections of other parts of the body. The establishment of the free action of the mucous membranes, the glands of the skin and of the salivary glands must certainly aid in the elimination of the toxic principle of syphilis, as well as of other diseases, from the system.

The question of the presence of glands in the ciliary body, as advocated by E. Trecher Collins, (Vol. XI, *Trans. Ophth. Society of the United Kingdom*) has been again taken up by Alt (*Amer. Jour. of Ophth.*, Vol. XIII, No. 1). These small diverticula in the pigment layer of the ciliary body, which are most marked in the vicinity of the union of the pars ciliaris nonplicata with the pars ciliaris plicata, can be seen in any anteroposterior section of this part of the human eye, but are rendered more easily visible by bleaching sections after Collins' method. Alt formerly regarded these follicular depressions as being due to folds produced by the play of the ciliary muscle, but since he has found them partly developed in the eye of the fetus, he is inclined to believe that they are not due to this cause. The pigment layer of the greater portion of the ciliary body, like that of the iris, represents two layers of the posterior portion of the secondary eye vesicle, which has become folded upon itself during the process of the development of the eye, and the character of the cells in the depressions mentioned do not differ from those found in the pig-

mented layer spread out over the ciliary processes and other portions of the surface of the ciliary body. The vascularity in the part mentioned is not as great as we would expect to find in active gland structure and cannot compare with the vascularity of the ciliary processes or of the iris. Since the function of secretion is undoubtedly possessed by the pigment cells of the pigment layer of the retina, it is not unreasonable to attribute such function to the pigment cells of iris and ciliary body, and if this is the case we must adopt the view of Nicati, that the ciliary body and iris form one large gland from which is derived the secretions to the interior of the eye.

In the operative treatment of detachment of the retina, American and English surgeons have occupied conservative ground, but few of the various methods that have been advanced having originated with them. German and French ophthalmologists have introduced new methods of treatment from time to time, and have claimed for them results that were very gratifying. Incision of the sclerotic and choroid, beneath the detached retina, for the purpose of permitting the sub-retinal fluid to escape, is one of the earliest surgical procedures. Many operators combine single or multiple incisions of the retina with the above-mentioned procedure, permitting the sub-retinal fluid to pass into the vitreous chamber, with the hope that by restoring the volume of the contents of the vitreous chamber, replacement of the retina would follow, and permanent adhesion between retina and choroid would result from the exudation and irritation provoked by the incisions. Bull (*Trans. Am. Oph. Soc.*, 1894, p. 382), recognizing the fact that the contraction of cicatricial bands that have formed in the vitreous is a factor in the production of detachment of the retina in certain cases, resorts to division of these bands by incision through sclera, choroid, and retina, permitting the sub-retinal fluid to escape into the vitreous chamber. He reports favorable results in the cases operated on. Bull warns against the attempt to divide vitreous bands that are vascular. In the belief that shrinking of the vitreous humor, accompanied by traction from filamentous bands uniting retina and vitreous, are responsible for detachment of the retina in many of the spontaneous cases, Deutschmann (*Beiträge z. Augenheilk.*, Vol. XX, p. 1) employs a modified form of Bull's procedure. In the more recent cases the point of a thin, double-edged knife is passed through the sclera, choroid, and retina, at or near the periphery of the detachment, and is carried to a point very near to the opposite wall of the globe. It is then swept through the vitreous just over the detachment and the filamentous bands divided. The retina is incised in two or more places; a portion of the sub-retinal fluid passes into the vitreous chamber and a portion passes outward through the scleral wound. In some cases Deutschmann has resorted to the injection of the vitreous humor of a rabbit into the vitreous chamber of the human eye by means of a Parvez syringe. In old cases of detachment, in order to establish marked adhesive inflammatory reaction between retina and choroid, the fine point of a Paquelin cautery is employed to pierce the sclera and choroid, passing into the sub-retinal space, either before or after the incisions above referred to are made. A number of cases are reported which have been under observation from a few months to a number of years. The reaction from the operation is said to be slight, and the results very favorable. Application of the galvano-cautery point by puncture, has been made. The injection of irritating solutions between retina and choroid, after permitting the sub-retinal fluid to escape, notably the injection of one or two drops of Lugol's solution, as advocated by Schoeler, of Berlin, has been extensively tried. Recently, Terson (*Anal. d'Oculistique*, July, 1895, p. 23) has made something of a study of the causes of detachment of the retina. He is of the belief that many of the cases of detachment are due to sub-retinal exudation from the choroid and that progressive myopia, primary changes in the vitreous —either liquefaction or the formation of connective tissue bands—do not possess the importance as causes, that have heretofore been assigned to them.

Terson believes that in electrolysis we possess a means of treatment for detachment of the retina that is valuable. The positive pole only is introduced into the eye; for the reason of its greater coagulating effect as compared with the negative pole, and because the wound made by

the needle of the positive closes more quickly than that made by the needle of the negative pole. Bipolar electrolysis, as employed by Schoeler and others, is not thought to possess the advantages that belong to the positive pole when used alone. A strong platiniridium needle with a gutta-percha handle is employed. The point of the needle is passed through the sclera and choroid into the sub-retinal space, and a current of five milliamperes is permitted to pass for one minute. Of the twelve cases reported, the detachment had been present from two to eight weeks in eight; in two, the time was not given; in one, three years; in one, eight days. Of the first eight cases temporary improvement occurred in three; more lasting improvement in five cases. In the case of three years' duration irido-choroiditis followed the operative procedure. In one other case there was no improvement, and in one, temporary improvement only. In the detachment of eight days' standing, a permanent recovery is reported. The eye in this case was extremely myopic. Ultimate vision of $\frac{1}{12}$ was obtained. The results as quoted above are encouraging, but we must await the report of the experience of other operators before judging the value of the procedure.

John E. Weeks, M.D.

ECHOES AND NEWS.

There is reported from South Bound Brook, N. J., a sad case of the poisoning of four young children, who had mistaken wild parsnip for horseradish. One child died before medical aid could be procured, and the other three were made dangerously ill.

The annual report of the registrar-general of Great Britain for 1895 shows that the death rate was lower last year in that country than in any other year since its mortality statistics have been recorded. This is an important statement. It shows that the average health of one of the most crowded countries in the world is steadily growing better. The lowered death rate indicates that where the race against death is the sharpest the average bodily condition of men and women is most comfortable. In Great Britain the vast majority of the people live in the cities and large towns, and the decrease in the death rate points out that sickness and loss of life in these places are largely under control. It would appear from this statement that where civilization is best it has most influence over the conditions of life.

A non-poisonous match has been invented by a distinguished chemist, M. Pouteaux. Permanganate of potash and acetate of amyl are among the inoffensive ingredients. At the Pasteur lucifer match manufactory the combination has been tested with satisfactory results. The matches are easily made, without the slightest danger to the factory hands. They ignite readily, there is no danger of explosion when stored, and the disagreeable odor common to lucifer matches is in these replaced by that of aniseed.

The New Zealand government has sent to London the draft of a bill which provides for the strict exclusion of consumptives from the islands, just as individuals having smallpox, leprosy, or other contagious disease are now prohibited from landing by the existing laws. To better enforce this proposed act, it is provided that a heavy penalty be imposed upon the captain of any ship who may land a person suffering with phthisis.

A large addition to the Baltimore Medical College and the Maryland General Hospital is to be erected in the near future.

The executive council of Massachusetts has unanimously confirmed the nomination of Dr. Henry P. Walcott, chairman of the State Board of Health, as metropolitan water commissioner.

On March 21st Dr. M. M. Royer died suddenly at his home, 906 Warren avenue, Chicago, of some form of cardiac disease, which was wholly unsuspected by his friends and family. However, the previous week he had acquired a strong premonition of his approaching end, of which he had warned his family, and then prepared a brief biography, to which was appended detailed directions of the programme to be followed at his obsequies.

Governor Morton has appointed Dr. Theodore K. Tuthill, of No. 319 West Eighteenth street, as coroner for New York city, in the place of Coroner O'Meagher, deceased.

Dr. Frank Winders has been elected by the State Board of Medical Examiners of Ohio as their permanent secretary. He is a graduate of Bellevue Hospital Medical College of New York, in the class of 1895.

A more than ordinary degree of forethought was displayed by a lady, formerly of Staten Island, but now deceased, whose will is at present the subject of legal proceedings. In order to avoid the most common legal grounds for setting aside testamentary documents she subjected her mental condition to the investigation of five expert alienists, who became witnesses to her will, and certified to her soundness of mind.

The cause of caisson disease, or rather of the train of symptoms that has long been known to result from exposure of workmen to continued high atmospheric pressure in the construction of submarine masonry, is now

the subject of experimental investigation in France. M. Hersent, a civil engineer, expresses the firm conviction that the large sacrifice of life in the past has been due to the rapid variations in the degree of compression, brought about by ignorance or carelessness. He found that dogs could endure, without danger, a pressure of seventy-five to eighty pounds to the square inch for as much as five hours, provided that twenty-five minutes were occupied in gradually producing this amount of compression, and one and a half hours in "decompression," a uniform temperature being maintained. Practically the same experiments, with perhaps a more gradual change in the pressure, were carefully made upon workmen, with only a little lassitude, lumbago, and slight prickling sensations of the surface resulting. It was thus demonstrated that without overtaxing the workmen they can labor uninterruptedly for four hours or more under a pressure of seventy-five pounds or more; that is to say, at 150 to 175 feet below sea level, on condition that they should experience a very slow compression and "decompression," and that the temperature be uniformly maintained.

The New York coroner's bill is reported to be in danger of defeat, due to adverse pressure brought to bear by the present incumbents and others interested in political patronage. It has been referred by the judiciary committee to a sub-committee of three, who seem disposed to consider the influence of the present coroners, and are led to fear, furthermore, that the medical profession, as a class, are to reap improper benefits from the adoption of this bill. If the sub-committee can devise some method for allotting these appointments by others than the judges of the supreme court, it is thought that a favorable report on the measure is probable.

The Cornell Brain Association, to which we recently alluded, has its prototype in the Mutual Autopsy Society of Paris, which has been in existence since 1876 and numbers 100 members.

The Hon. Mr. Gallinger, in the United States Senate last week presented numerous petitions and papers from clergymen, physicians, and educators, in favor of setting apart a Government reservation for the benefit of persons suffering from pulmonary diseases, who might be benefited by a change of climate to the salubrious atmosphere of the Rocky Mountain region; and subsequently he also introduced a bill setting apart the Fort Stanton military reservation in New Mexico for a like purpose. He spoke in favor of the proposition, which is under the lead of the American Invalid Aid Society of Boston.

The Brooklyn Board of Aldermen recently received a communication from the Commissioners of Charities calling attention to the overcrowded condition of the County Hospital and the serious danger to the six hundred patients in case of fire. Permission was also asked for the immediate erection of a drug and supply building, nurses' quarters, a home for the convalescents, and administration offices. It was also suggested that an electric light plant be provided for the hospital. The communication was referred to a committee.

The *British Medical Journal* states that the falling off in the production of cod-liver oil this season will certainly advance the wholesale prices of this standard remedy. Reports from the Norway fisheries show rapid diminution in the annual supply that must shortly result in a total suspension of the product. Some quotations already indicate an advance of nearly 100 per cent. over last season.

Governor Bradley, of Kentucky, has appointed Dr. B. F. Porter, colored, third assistant physician to the Lakeland Insane Asylum. As he will have several wards containing white patients under his medical supervision, the Governor has been receiving rather unpleasant criticisms throughout his State.

Dr. E. W. Martin, Chief Inspector of Foods for the New York Board of Health, found tuberculous beef exposed for sale in the markets last week. The animals were procured at the New Jersey stock yards.

A "divine healer" named Schrader, is now visiting Cincinnati. The manner of his advent, together with his readiness to be extensively interviewed for the public press, evinces the instincts of the ordinary patent medicine man. Flowing robes, a crown of thorns, and the general cut of hair and beard, suggest an affected resemblance to approved likenesses of the Savior.

SOCIETY PROCEEDINGS.

KINGS COUNTY MEDICAL ASSOCIATION.

Regular Meeting, February 11, 1896.

THE CLINICAL ASPECT OF CHRONIC DIFFUSE NEPHRITIS. (SEE PAGE 367.)

DISCUSSION.

Dr. T. M. Lloyd: In relation to etiology, observers of large experience have been convinced of the importance of constant nerve strain, excitement, or worry, as prominent factors in the production of chronic kidney changes, often it may be preceded by a chronic endoarteritis. These factors are often associated with persistent use of alcohol, tobacco, or other excesses, but frequently without these excesses, in subjects of good habits, excepting perhaps, a relative excess of food as compared with exercise and outdoor air, operating for years.

The importance of painstaking care and intelligent use of the methods of diagnosis of kidney diseases cannot be too strongly insisted upon. Every one who has had a large experience in urinary examinations knows how imperfectly many examinations of the urine are made, often by otherwise skilful men. It is specially important that cases with mere traces of albumin be early recognized if we are to help our patients. This condition must be differentiated positively from the temporary or less serious conditions. One of the most important of these is the presence of nucleo-albumin, formerly included under the

designation of mucin, which is not differentiated in so many of the delicate tests for albumin. The presence of albumin in minute quantity necessitates a most skilful and often laborious search for the microscopical elements indicative of the various renal changes.

With the strictest attention in the use of the most delicate tests for albumin, certain forms of chronic kidney lesion may escape detection for long periods if an exhaustive examination in other particulars be not made, viz: the quantity per twenty-four hours with the specific gravity of the whole, estimation for urea, and careful microscopical search.

I wish to call attention to a very ready, practical test I have made much use of, which is the nitric-magnesian fluid of Roberts.

The test is prepared by mixing one part of the pure nitric acid with five parts of a saturated solution of the sulphate of magnesia, and filtering. The principal advantages claimed for it by Dr. Roberts are that it does not stain or soil the fingers, that it does not show a coloration of iodin, and, most important of all, that it is a more delicate test than pure nitric acid. It is used the same way as the latter, a drachm being poured into the bottom of the test tube, holding this nearly horizontal so that the two liquids do not commingle.

This test possesses this very great advantage: that it condenses more thoroughly the albumin than does the nitric acid. It often happens that the zone produced by the nitric acid will be light and fluffy, mucin, or the substance I have so often referred to, being directly in contact with it in considerable quantity, while that produced by the nitric-magnesian test would be condensed, compact, lardaceous, and clearly and sharply defined, the obnoxious mucin being more distinctly separated from it and above it. Such a compact layer can be taken with more confidence as a basis for the estimate of the quantity of albumin. In regard once more to the delicacy of this test I have found it to show the presence of albumin often diluting it to a point where nitric acid ceased to show it. From my experiments I believe it to be easily a third more sensitive than nitric acid.

This test does not absolutely distinguish albumin from mucin, or nucleo-albumin, when small traces of the former are present, in all cases; but the ferro-cyanide test, as recommended by Purdy and E. E. Smith, will help to differentiate. This test of Roberts being more delicate and definite than nitric acid, and free from some of the errors of the latter, notably the nitrate of urea zone. I have been in the habit of using it for some years as a companion test.

Notwithstanding the importance of the manifestation of albumina minima we should be careful in giving too serious a prognosis in certain cases till a sufficient time and repeated observations of the urine and the patient indicate the grounds therefore. Many of us remember to have given a very grave prognosis, and to have found, months or years after, the patient living in comparative comfort and apparent health. These occurrences are not infrequent with elderly people. The presence also of albumina minima, hyaline casts, etc., I have observed in young children when perhaps the only other abnormal condition evident was a slight degree of anemia, and which disappeared under appropriate tonic treatment, change of air, etc.

Dr. A. R. Paine: I have grown to be more and more impressed by the importance of chronic nephritis. In our profession we see more and more of the universal way in which it manifests itself, and I have learned to regard the kidneys with more and more suspicion as people pass middle life; there are so many different manifestations, and we find so many different neuroses for which we cannot account, which, after examination of the urine, we find explained. In obscure diseases of the circulatory system where we have no suspicion of the kidneys, before examining the urine, we often find in these organs the pathological explanation of them. Hence I have made it an invariable rule to analyze the urine with especial care in patients who have passed middle life. I consider that it is very important, as stated by the author, that there be regular systematic observation. The remarks concerning sciatica recall to me a case in which, when I first knew the patient, there was no sign of disease except the sciatica, and one might have thought that she was in perfect health; but at last I found that the kidneys were to blame, and now nephritis is approaching to the last stage. All of us know so many cases of this kind in people who are past middle life that I have, as I say, become suspicious. And, though I agree with Dr. Lloyd, when he says that we must not too completely doom the patient who has albuminuria, because I have seen many cases, even in elderly people, where one might think that the end must be near, who, by taking care of themselves, have improved and lived for years very comfortably, still I have noticed that generally they eventually die from this trouble.

Dr. L. A. W. Alleman: The subject which the President has presented in his address is one of the greatest general interest, and to me it is particularly so, because of the importance of the complete clinical picture, when considering ocular changes, which we suspect to be of renal origin. The more I see of these cases, the more I am impressed with the difficulty of making a positive diagnosis of nephritic retinitis. Typical cases are not common in practice, and the atypical ones so nearly resemble the changes which are found in other retinal lesions that we must often be guided more by the history and the evidences of similar changes in other organs due to the same causes than by the ophthalmoscopic examinations; and it is to the less pronounced symptoms, those upon which the President has placed special emphasis, that we must trust, for the cases which show ocular lesions are not, as a rule, those suffering with the grave cardiac and respiratory manifestations. The cases we see are often discovered in an examination for glasses in patients ignorant of any serious organic disorders, and in whom urinary examinations often fail to discover albumin without a most careful and persistent search. It is estimated that about 6 per cent. of all Bright's cases show retinal changes. I believe this is entirely too low a percentage. The cases where the more distressing general symptoms are present do not

note slight ocular defects, and no examination of the fundus is made.

From a few examinations made in the wards of a general hospital, taking all cases of chronic renal disease admitted, I am inclined to believe that such changes are present in a majority of advanced cases. The recurrent conjunctivitis described in the paper is, I think, the same condition which Jonathan Hutchison enumerates among the symptoms of gout, calling it the "hot eye." Conjunctival hemorrhages are often found in these cases, but are, as a rule, associated with retinal hemorrhages, and sometimes even precede them.

Dr. A. C. Brush: It seems to me that there is one question to be considered here: whether all these symptoms are due to the kidney lesion, or whether both are not due to the same general systemic poisoning. Samoli, ten years ago, pointed out the fact that brain-workers have an excess of phosphates in their urine, and sooner or later suffer from renal disease from the local irritation, and we know that such substances as alcohol and the poisons of rheumatism, gout, and the bacterial products found in other diseases are capable of causing severe renal trouble with their other manifestations. It is also believed that the ptomaines developed in digestive disturbances may be followed by kidney trouble. The earlier symptoms, too, are often those of a general neurasthenia due to the toxemia. It is these patients who complain of singing noises in the head, of hearing bells, of flashes of light and small objects before the eyes, of insomnia, irritability, loss of memory, neuralgias, and other disturbances of general sensation. It has been lately shown that 37 per cent. of the patients admitted to the asylum suffer from chronic renal disease, which is believed by some to be the cause of the insanity.

Dr. Bierwirth: I have not much to say in closing. I have discarded the test of which Dr. Lloyd spoke, as I have others of the contact method. I have for years discarded the nitric acid method, because it does not detect with sufficient accuracy. You do not know positively whether you have a trace of albumin or not, the difficulty lying in the fact that the coloring matter of the urine is so darkened by the nitric acid that a trace of albumin cannot be detected at the point of contact. The contact method always makes me feel uncomfortable, because it does not give me positive results, and I have to examine further with other tests.

As regards the progress of the disease, I thoroughly agree with Dr. Lloyd. There are elderly people, people of fifty or sixty years of age, who suffer from chronic Bright's disease, and who live very comfortably, but they must live in a certain way. It is absolutely essential for these people to stay indoors, say from October through the winter, and that is one of the reasons why it is well for them to live in an equable climate during the winter. A patient of mine died a week ago who had had chronic Bright's disease for years, and died just as a number of cases do. She had three attacks in one one month, and she died because she was exposed to a cold draft. The greatest trouble with cases of acute Bright's disease is that they occur in persons of active life who find it very difficult to realize that they have to take care of themselves. A man may live for ten, fifteen, or twenty years even, if he will only take good care of himself and live in the way which I have indicated. I have a patient who is a very good example of this. A woman who had always been well until the disease of the kidneys appeared and who could not understand the importance of taking care of herself, She had several very severe attacks of acute exacerbation and nearly died in one of them, and ever since then she has been extremely careful and consequently fairly well. That is one of the cases of elderly people who live very comfortably and live a long time. But as I say, persons of active business habits have great difficulty in accustoming themselves to taking care of themselves, and thus there are dozens of men under ground who should be alive; men who led active business lives, to whom I said five years ago that they must stop, they must have rest, they must give up and go home and take care of themselves; they could not accustom themselves to it and so they have suffered the consequences. I know a case of a gentleman over seventy years of age who could not for months get it into his mind that he must stay indoors, until he had a couple of attacks, which were attributed to his having been exposed and taking cold, and he has now learned to take care of himself and is living very comfortably, although, in my judgment, he has very serious kidney trouble. Another very important point which Dr. Lloyd has made and in which I agree with him, is the necessity for frequent and continued examination for hyaline and granular casts. I have seen cases of simple albuminuria of which he speaks, and I regard them with a great deal of suspicion. I think you will find that most of them, if you watch for a sufficiently long time, will be very apt to prove cases of Bright's disease and not simply cases of functional disturbances. This disease begins in a most insiduous way and it may take years—four, five, or six years—before it shows itself plainly. If a patient is in active business life it is hard for him to understand at once that he has to take care of himself, but if he does, the disease makes but slight progress. I have been frequently struck with the uselessness of the examination of urine in life insurance, because a man may present himself before the examiner before or after a meal, or between meals, or far from them, and the urine taken in these cases, especially in examinations of persons past middle life, are practically useless, because sufficient time cannot be given to them to make the examination properly. In my judgment and observation, life insurance examination of the urine, therefore, is practically useless. The patient may, if he is honest, give a correct history of himself or he may not. I remember a man whom I examined. The only thing that I could find was a rapid pulse—112—but his urine contained about 5 per cent. of albumin. This was a case of a man who thought himself perfectly well, and who had gone on for years without any knowledge that he had anything serious the matter with him. Again there are many cases where people suddenly develop symptoms of coma. I recall the case of a gentleman who felt drowsy, and from this he rapidly drifted into coma and from coma into death, and after death it was found that he had marked disease of

the kidneys, yet during life he had never given an exhibition of a single symptom. These repeat themselves over and over again. They are not of very rare occurrence and that is why I lay so much stress upon the importance of frequent examinations of the urine. In many of these cases they only show a trace of albumin even up to the time of death. I have known cases to end fatally in which there was nothing more than a trace of albumin up to the time of death, and so I repeat: this all shows us the extreme importance of great care in examinations of urine, and especially of making frequent tests for urea.

REVIEWS.

The Year-book of Treatment for 1896. A Critical Review for Practitioners of Medicine and Surgery. 12mo, 484 pages. Philadelphia: Lea Brothers & Co., Publishers, 1896.

This little volume, which is compiled by several of the best known clinicians of Great Britain, has, unlike many compilations that pass as medical literature, a real purpose. It gives within the confines of 500 pages a review and an estimation of all that has been done in the civilized world to advance the purpose of our art and our science as observed by men who are capable of dispassionate criticism. A careful examination of the Yearbook for 1896 shows it to be abreast, if not in advance, of its predecessors. A more equitable allotment of space to subjects of equal importance might have been made by the editor. For instance, the diseases of the heart and lungs are given sixty pages, while fourteen are allotted to diseases of the eye, and thirty to diseases of the mind and nervous system, and more than one-half of the volume is taken up by a consideration of general and special surgery.

The chapter on anesthetics is carefully prepared, and particularly useful are the illustrated pages devoted to new apparatus for anesthesia. The pathogenesis of diphtheria and the present status of antitoxin in the treatment of this disease are considered in praiseworthy detail. It is admitted by every one who has had experience with antitoxin treatment, that one of the first claims of the advocates of the antitoxin plan of treatment to have been found wanting was that it would diminish the frequency of paralysis after diphtheria. Dr. Phillips quotes approvingly evidence to show that paralysis becomes more frequent after treatment.

The universal activity in operative surgery, and its triumphs, are set forth convincingly, yet we notice a few serious omissions. The notable address of v. Bergmann before the Congress of German Surgeons last year, the really wonderful report made by Kocher, on operation for goitre, and some other important contributions have been overlooked.

Another matter that cannot fail to strike the critical reader of medical literature is that sufficient discrimination is not made between contributions whose apparent aim it is to advance the science of medicine, but whose real purpose is to contribute to the selling qualities of the substance or preparation which the writer claims to have found so useful, and real, genuine, honest expressions of experience and judgment. It is a matter of regret that physicians are found who will prostitute their names and their reputations in this manner, but they are, and we are powerless to prevent it. We can, however, avoid disseminating their canards, and we expect their critics and mentors to do so.

The Yearbook is to be congratulated on the comparative freedom which it has from such references, but it may be still further purged.

We have no hesitancy in saying that this little volume will be found most serviceable to the general practitioner.

An appended selected list of new books is a commendable feature.

A Text-book of Forensic Medicine and Toxicology. By Arthur P. Luff, M.D., Lecturer on Medical Jurisprudence and Toxicology in St. Mary's Hospital. In two volumes, small 8vo. Vol. I, 416 pages. Vol. II, 334 pages and Index. London and New York: Longmans, Green & Co.

This is a compact and useful compendium of medical jurisprudence and toxicology. It is illustrated with twelve full-page plates and fifty-seven figures in the text. One of these plates, representing various blood-spectra, is in colors. All the illustrations are well executed and the general typography is excellent.

The matter of the book is well selected and arranged, and follows the usual order of treatises of this character. The toxicology covers over 300 pages, being all included in the first volume. This is not an undue proportion for so important a subject. Experience in this country shows that physicians are more liable to err in the diagnosis of cases of poisoning, or, at least, to mistake them for disease, than in almost any other field of work. We are glad to note that a considerable space is given to Reinsch's test for arsenic. The ingenious method described for securing the crystalline sublimate on the surface of a glass slip, so that it can be examined under the microscope, will be of much use. Dr. Luff does not think it possible to determine from the measurements of the corpuscles that the blood was positively human blood, but thinks that it is only safe to say that it is mammalian blood. This is a wise and conservative view. Much injury has been done to the cause of expert testimony by the readiness of certain experts to testify positively in this and similar cases in which positiveness cannot be attained.

The treatment of all the topics seems to be excellently proportioned, and we consider the work to be a most valuable addition to the literature of the subject.

Medical and Surgical Report of the Children's Hospital, 1869–1894. Edited by T. M. Rotch, M.D., and Hubert L. Burrell, M.D. Boston: Published by the Board of Managers, 1895.

This handsome volume of 367 pages is published with the view of "presenting to the community, first, the history of an institution organized and maintained for the care of sick and disabled children; secondly, in order to show, by the contributions of the members of its medical staff, how much good work has been done, and the most efficient methods known to medical science of

accomplishing its object; and, thirdly, of offering carefully prepared articles, based largely on the practice of the hospital, on various topics of importance in the science of medicine." For this purpose the matter is divided into three parts, under the headings "Administrative," "Medical," and "Surgical." Of these the last takes up fully two-thirds of the volume, and presents quite a comprehensive view of this branch of the hospital's work and of its methods of treatment. Orthopedics naturally holds a prominent place, and is quite fully illustrated. The medical division embraces only seven short papers, which, however, are of unusual interest. It is to be regretted that greater space was not devoted to this portion of the hospital's service.

The volume is a handsome specimen of bookmaking, and is creditable alike to the institution whose work it thus brings to public notice and to the various members of the staff whose unselfish labors have made the hospital what it is to-day.

The American Year-book of Medicine and Surgery. Being a yearly digest of scientific progress and authoritative opinion in all branches of medicine and surgery, drawn from journals, monographs, and textbooks of the leading American and foreign authors and investigators. Collected and arranged with critical editorial comments by a large corps of collaborators (twenty-seven) under the general editorial charge of George M. Gould, M.D. Profusely illustrated with numerous woodcuts in text and thirty-three handsome half-tone and colored plates. Large, 8vo. Pp. 1183. W. B. Saunders, Philadelphia, 1896.

If professional writers ever read, they get a part of their just punishment when, in the avalanche of literature falling about us on every side, they may occasionally try to look up a special subject or find a certain article. It is not that too much ink is spilt, but because it is too widely spilt in small channels and gullies which never unite to make a navigable stream, that we complain.

It is, therefore, with gratitude that we hail all properly constructed "Year-books" in which men of wide reading, of practical knowledge, and capable of judicial criticism collect a summary of each year's medical progress. To a certain extent they save us from the clutches of those flatulent scribes who write on such subjects as "Unilateral Polymerism of the Fimbriæ of the Fallopian Tube as a Cause of Climacteric Scoliosis," or "The Treatment of Sterility by the Instillation of the Fresh Juice of an Extradomiciliary Orchid." Of course, we cannot depend wholly upon "year-books," but they lighten our running struggle with current medical literature.

As to the present publication, the distinguished names connected with the *résumé* of each subject and the scholarly and professional eminence of the editor are sufficient guarantees for its excellence. By no means of the least worth are the editorial comments (enclosed in brackets) upon new suggestions or matters in dispute.

It would seem as though hardly enough space, fifty-four pages, had been allotted to materia medica, experimental therapeutics, and pharmacology, but a closer perusal may demonstrate that the deficiency is made good under each specialty.

The work would be improved if a uniform system of weights, measures, and thermometric readings had been employed throughout. As it is, grains and grams, Fahrenheit, and Centigrade, appear, sometimes on the same page.

The publisher's work has been well done. The print is large and clear, the illustrations copious and demonstrative.

Elementary Technique in Histology and Bacteriology. By Ernest B. Hoag, A.B., B.S., Instructor in Zoölogy and Physiology, Throop Polytechnic Institute, Pasadena, Cal., and H. Kahn, Pharm. (Mich.), Assistant Demonstrator in Bacteriology, Northwestern University Medical School, Chicago. E. H. Colegrove & Co., Chicago, 1896.

This is a compend of 130 pages for beginners in histology and bacteriology, describing the various methods of staining and preparation of tissue for microscopic study. No attempt is made to introduce descriptive histology. The book is poorly printed, and for a work intended for beginners contains too many technical abbreviations. It is, however, up to date, and will no doubt be useful to those for whom it was intended.

ANNOUNCEMENTS.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The forty-seventh annual Session of the American Medical Association will be held in Atlanta, Ga., on Tuesday, Wednesday, Thursday, and Friday, May 5, 6, 7, and 8, commencing on Tuesday, at 10 A.M.

OFFICERS OF SECTIONS.

1. Practice of Medicine.—Wm. E. Quine, Chicago, Ill., chairman; DeLancey Rochester, Buffalo, N. Y., secretary.

2. Obstetrics and Diseases of Women.—J. Tabor Johnson, Washington, D. C., chairman; Reuben Peterson, Grand Rapids, Mich., secretary.

3. Surgery and Anatomy.—C. A. Wheaton, St. Paul, Minn., chairman; Wm. L. Estes, South Bethlehem, Pa., secretary.

4. State Medicine.—Chas. H. Shepard, Brooklyn, N. Y., chairman; Elmer Lee, Chicago, Ill., secretary.

5. Ophthalmology.—Lucien Howe, Buffalo, N. Y., chairman; Frank Allport, Minneapolis, Minn., secretary.

6. Diseases of Children.—A. C. Cotton, Chicago, Ill., chairman; A. J. Work, Elkhart, Ind., secretary.

7. Dental and Oral Surgery.—R. R. Andrews, Cambridge, Mass., chairman; Eugene S. Talbot, Chicago, Ill., secretary.

8. Neurology and Medical Jurisprudence.—Thos. D. Crothers, Hartford, Conn., chairman; W. J. Herdman, Ann Arbor, Mich., secretary.

9. Dermatology and Syphilography.—L. D. Bulkley,

New York, chairman; T. C. Gilchrist, Baltimore, Md., secretary.

10. Laryngology and Otology.—G. V. Woolen, Indianapolis, Ind., chairman; M. R. Ward, Pittsburgh, Pa., secretary.

11. Materia Medica and Pharmacy.—F. E. Stewart, Detroit, Mich., chairman; W. B. Hill, Milwaukee, Wis., secretary.

12. Physiology and Dietetics.—H. Bert Ellis, Los Angeles, Cal., chairman; Henry Salzer, Baltimore, Md., secretary.

WM. B. ATKINSON,
Permanent Secretary.
BROAD AND PINE STREETS, PHILADELPHIA.

THE CARTWRIGHT LECTURES.

THE Cartwright Lectures of the College of Physicians and Surgeons for 1896 will be given by George S. Huntington, A.M., M.D., Professor of Anatomy in the Medical Department of Columbia University, New York.

1. Lecture, Wednesday, April 8th.—Morphology of the Ileo-colic Junction and Large Intestine in Vertebrates.

2. Lecture, Wednesday, April 15th.—Evolution of Human Cecum and Vermiform Appendix, and Probable Lines of Derivation of the Corresponding Structures in the Other Vertebrates.

3. Lecture, Wednesday, April 22d.—Morphology of the Bronchial System and Its Relation to the Pulmonary Vascular Supply in Mammalia.

The lectures will be given in the hall of the New York Academy of Medicine, 17 West Forty-third Street, on the above dates, at 8.15 o'clock, P.M.

Committee: D. Bryson Delavan, Wm. K. Draper, Saml. W. Lambert.

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FROM FEBRUARY 1ST TO MARCH 16TH, 1896.

MURRAY, R. D., Surgeon. When relieved at Tortugas Quarantine, to proceed to Mobile, Ala., and assume command of service, February 19, 1896.

PECKHAM, C. T., P. A. Surgeon. To proceed from San Francisco Quarantine to Port Townsend, Wash., and assume command of service, February 6, 1896.

KALLOCH, P. C., P. A. Surgeon. When relieved at Cincinnati, Ohio, to proceed to Charleston, S. C., and assume command of service, February 6, 1896.

WILLIAMS, L. L., P. A. Surgeon. When relieved at Charleston, S. C., to report at Bureau, and then to proceed to Tortugas Quarantine and assume command of station, February 6, 1896.

VAUGHAN, G. T., P. A. Surgeon. Granted leave of absence for seven days, February 17, 1896.

COBB, J. O., P. A. Surgeon. When relieved at Port Townsend, Wash., to proceed to Cincinnati, Ohio, and assume command of Service, February 6, 1896.

GEDDINGS, H. D., P. A. Surgeon. When relieved at South-Atlantic Quarantine, to report at Bureau for duty, February 6, 1896.

ROSENAU, M. J., P. A. Surgeon. To assume command of the San-Francisco Quarantine, February 6, 1896.

NYDEGGER, J. A., Assistant Surgeon. To proceed from Washington, D. C., to Reedy Island Quarantine, for special temporary duty, February 17, 1896. To report at Bureau preparatory to assuming command of South Atlantic Quarantine, February 19, 1896.

VAUGHAN, G. T., P. A. Surgeon. Leave of absence for seven days, granted February 17, 1896, revoked February 27, 1896.

GUITERAS, G. M., P. A. Surgeon. Directed to proceed, on March 25, 1896, from Gulf Quarantine Station to Key West, Fla., and assume command of Service, February 27, 1896.

SMITH, A. C., P. A. Surgeon. To proceed from Memphis, Tenn., to Gulf Quarantine for duty, February 25, 1896.

YOUNG, G. B., P. A. Surgeon. When relieved at Key West, Fla., to proceed to Memphis, Tenn., and assume command of Service, February 27, 1896.

WICKES, H. W., Assistant Surgeon. To assume temporary command of Service at Memphis, Tenn. Upon being relieved, to rejoin station at New Orleans, February 24, 1896.

HAMILTON, J. B., Surgeon. Granted leave of absence for four days, March 16, 1896.

IRWIN FAIRFAX, Surgeon. To inspect service at Havana, Cuba, and quarantine stations in the South, March 2, 1896.

CARRINGTON, P. M., P. A. Surgeon. Granted leave of absence for thirty days, March 16, 1896.

NYDEGGER, J. A., Assistant Surgeon. To Report at Bureau for Instructions, March 6, 1896. To proceed from Washington, D. C., to South Atlantic Quarantine and assume command March 7, 1896.

PROCHAZKA, EMIL, Assistant Surgeon. Granted leave of absence for ten days, March 11, 1896.

RESIGNATION.

STRAYER, EDGAR, Assistant Surgeon. Resignation accepted, to take effect February 14, 1896.

BOARD CONVENED.

Board to examine and report on schedule of subsistence for seamen on merchant vessels of the U. S., to meet in Washington, D. C., March 16, 1896. Surgeon P. H. Bailhache, chairman; P. A. Surgeon C. E. Banks and P. A. Surgeon J. J. Kinyoun, recorders.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FROM FEBRUARY 27TH, 1896, TO MARCH 30TH, 1896.

February 27.—Assistant Surgeon J. C. ROSENBLEUTH detached from the Naval Laboratory and ordered to the "Raleigh."

Assistant Surgeon E. M. SHIPP detached from the "Raleigh" and ordered to the "Vermont."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 25, 1896, TO MARCH 30, 1896.

The leave of absence on surgeon's certificate of disability, granted Captain Benjamin Munday, Assistant Surgeon, is extended two months, on account of sickness.

Leave of absence for one month, to take effect upon his relief from duty at Jefferson Barracks, Missouri, is granted Major Robert H. White, Surgeon.

The following named officers of the Medical Department are relieved from duty in Washington, to take effect upon the completion of the present course of instruction at the Army Medical School, and are assigned to duty at the following named stations:

First Lieutenant Thomas J. Kirkpatrick, Assistant Surgeon, Fort Columbus, N. Y., for temporary duty.

First Lieutenant John H. Stone, Assistant Surgeon, Fort Leavenworth, Kan.

First Lieutenant Irving W. Rand, Assistant Surgeon, Fort Apache, Ariz.

First Lieutenant Powell C. Fauntleroy, Assistant Surgeon, Fort Riley, Kan.

First Lieutenant James S. Wilson, Assistant Surgeon, Madison Barracks, N. Y., for temporary duty.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

THE TREATMENT OF THE INDIGESTION OF STARCHY FOODS.[1]

BY REYNOLD W. WILCOX, M.D., LL.D.,
OF NEW YORK;
PROFESSOR OF CLINICAL MEDICINE AND THERAPEUTICS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; VISITING PHYSICIAN TO ST. MARK'S HOSPITAL.

THE proper treatment of this form of indigestion takes into consideration its causation. As has been said at another place,[2] the prophylaxis comprises the limitation of the starches ingested, insists upon thorough mastication, which results in complete insalivation, because in this way is the output of saliva increased, and the taking of starchy foods in as dry a condition as is possible. By giving careful attention to these conditions, a very considerable number of instances of the indigestion of starchy foods can be relieved. This is the extent to which the treatment of so-called buccal dyspepsia can go in the way of prevention.

The treatment of the indigestion of starchy foods must take into consideration the acidity of the stomach contents, the amount and character of the pancreatic fluid, the influence of intestinal micro-organisms, the deficient or exaggerated peristalsis, and the absorption of the converted starch.

Too great acidity of the gastric contents is unfavorable to starch conversion, because: first, it limits the time during which the ptyalin from the salivary glands acts in the stomach, at best but half an hour, or abolishes it altogether; secondly, the outpouring of an excessively acid fluid from the stomach into the duodenum delays and markedly interferes with the re-establishment of starch conversion by the action of the amylopsin of the pancreatic fluid. In these cases the testing of the stomach contents gives a ready solution to the problem, and the neutralization of the excess of acid by sodium bicarbonate in dose from five to a hundred grains, in time varying from immediately to two hours after eating, will rectify this error. Recent papers have shown the harmlessness of even the long-continued use of large doses of this drug; and, further than this, the favor in which this remedy is held by many practitioners is due, not so much to its beneficial effect upon gastric, as to its secondary action upon intestinal digestion. In these cases not only must the proper dose be ascertained for each individual, but the time for its administration is equally important. The methods for ascertaining the motility of the stomach have been so frequently of late the subject of study by clinicians that it is not necessary for me to discuss them at this point. In passing, it is worthy of remark that the action of sodium bicarbonate is solely in neutralization of the free hydrochloric acid in the stomach, the important cause of interference with starch conversion; but it is probably without effect on the acids in organic combination.

Of disturbances of the motor functions, constipation is the rule in imperfect starch conversion. The best method of overcoming this is the administration of a saline in conjunction with an alkali, the latter assisting in the process of conversion. Further than this, as both Wöhler and Miahle have pointed out, the administration of salines will diminish the urinary acidity and quite likely also increase the normal alkalinity of the intestinal contents. The saline, which I have used by preference, is sodium phosphate (the normal, not the acid phosphate) in from 40 to 120-grain doses, to be taken in a full glass of hot water on rising in the morning. To this dose is added 15 to 40 grains of sodium bicarbonate. The advantage which the phosphate possesses over the sulphate is that it is distinctly less disagreeable in taste. As an alternative to these drugs I have used cascara sagrada in various preparations, in sufficient dose to secure a full movement, but I am not satisfied that its action is so beneficial. If gastric acidity is high, then we must in addition administer large doses of sodium bicarbonate during, or immediately after, each meal. Haidenhain has shown that alkalies facilitate pancreatic digestion, and this is the probable explanation.

Diarrhea is by no means common. It is generally due either to obstinate constipation, and alternates with it, or to abnormal activity of the micro-organisms. In the first case, as a rule, hard masses are found in the stools; in the second, the passages are watery, containing mucus and are of

[1] Read before the Section on General Medicine of the New York Academy of Medicine, February 18, 1896.

[2] MEDICAL NEWS, Vol. LXVIII, p. 182.

bad odor. If the diarrhea is due to the irritation produced by hardened masses, thorough purgation by the official compound carthartic pill followed by the sodium phosphate mixture is sufficient. If it is due to fermentation, a preliminary purgation with castor oil should be followed by the use of intestinal antiseptics. In either case no opium nor any of its alkaloids should be administered, for these only give temporary relief and lay the foundations for a worse condition than previously existed. The so-called intestinal astringents are equally useless. When the fermentation is marked, the expulsion of gas and pain are prominent symptoms. The treatment for the associated diarrhea is given above. In addition intestinal antiseptics should be continually administered. Since the commencement of my studies in 1884, I have made use of a large number of drugs, and their various disadvantages have been determined by clinical observation. Following Bouchard, we can say that naphthol has the best bacteriological basis for its therapeutic use. On the other hand, it is locally irritant, and it also increases the chlorine and generally the hydrochloric acid of the stomach, thus interfering with starchy digestion. Bismuth salicylate is not open to these objections, but unless the kidneys are healthy, this, as well as the other salicylates, is contra-indicated. Another disadvantage is, that this decomposes in the stomach, setting free the salicylic acid. Further, as Gley has shown, unless the pancreatic fluid and bile are discharged in sufficient amount into the duodenum so that distinct alkalinity is secured, the breaking up of such compounds as salol does not take place, and thus the salicylates may be useless. Salol presents another objection from the carbolic acid which it contains. I have used bismuth naphtholate with much satisfaction in these cases; it is not irritant and certainly limits the amount of gas formed, the offensiveness of the discharges, and decreases pain when caused by intestinal distention of gas. The dose varies from ten to twenty grains two hours after eating, administered as a powder or in gelatin capsules. Benzoyl-guaiacol has been used in a few instances, but not with the same success. The importance of intestinal antisepsis does not alone lie in the prevention of gas-formation, diarrhea, and pain, but also in the prevention of auto-intoxication from ptomaine absorption. By these means also the remote effects of systemic poisoning, the fecal anemia of Clark, neuralgia, vertigo, and the mental symptoms are obviated, and the results of the action of the micro-organisms of proteids resulting in indol, phenol, and skatol, and other aromatic bodies are minimized. The proper method of dealing with flatulence accompanied by pain is outlined above. For impatient individuals, while we are evacuating the offending material and establishing antisepsis of the digestive tract, a plan for affording speedy relief, and one which will not interfere with the action of the drugs in use, must be adopted. This is the administration of the concentrated tincture of avena sativa in a wineglassful of hot water every half hour until the pain is subdued.

The absorption of converted starch takes place rapidly enough if peristalsis is normal and mucus is not present in inordinate quantity. The latter is reduced in amount by the use of the sodium phosphate mixture in the manner directed.

The changes in character and amount of the pancreatic fluid have been the cause of various therapeutic expedients, and in obviating the results of these variations, physicians have found many apparently useful resources. At the outset pancreatin should be considered. The preparations, as found in the market, are often inert and, even if not, its action is destroyed in the stomach by contact with the acid gastric juice. To prevent this loss of action, Unna used pills coated with keratin. With this method of administration there is some question if these pills will not pass entirely through the intestinal tract with undissolved coating. It has been proposed to coat these pills with fused salol. The same objection applies to this practice as to the use of this drug for the establishment of intestinal antisepsis. The cases when it is most needed are those of deficient flow of pancreatic juice and diminished alkalinity of the contents of the duodenum, and so the salol would likely prove to be an impervious coating. Probably the best coating is an alcoholic solution of shellac, containing a sufficient quantity of balsam of tolu to impart a proper degree of elasticity, so that cracking of the coating during its drying is obviated; this was the suggestion of Flint. The use of pancreatin then appears to be rather in the preparation of predigested foods than administered as a drug.

Diastase, the maltine of Irwine (1785), Dubrunfault (1823-30), Payen, and of Persoz, has been the subject of much study. As made by Payen and Persoz, it is capable of dissolving, in several hours, fifteen to eighteen hundred times its weight of cooked starch. This as other diastases loses its property of converting starch in the presence of acid, but the degree of acidity requisite is less than the usual gastric acidity. Although its

action is favored by alkalies and alkaline salts yet the caustic alkaline solutions destroy it. As Hayem points out its action is best between 95° F. and 104° F., and the analogy between the vegetable and animal diastase (ptyalin) appears to be complete. The use of diastase from malt was insisted upon by Couteret (1870) who claimed to obtain great benefit from its use. In cases of gastric hyperacidity, when the action of the ptyalin is supended in the stomach and when that of the pancreatic fluid is lessened or prevented, the use of vegetable diastase administered with an alkali (sodium bicarbonate) gave good results. This practise was also sanctioned by Boas. For this purpose the following method of preparation has been employed: Three ounces, *i.e.*, three heaping tablespoonfuls of crushed malt, is well mixed with a half pint of cold water in a jug and allowed to stand from ten to twelve hours. The supernatant fluid was then poured off and strained through two or three folds of muslin until the filtrate becomes clear and bright. The yield is about six ounces. The disadvantages of this preparation were found in the necessity of its being freshly prepared. To preserve it, a few drops of chloroform were added to a tightly corked bottle of the liquid. When required for use it should be emptied into a saucer and left in a warm place, when, after two or three hours, the chloroform would be entirely evaporated. A liquid preparation of diastase, which is permanent, has been found in the shops for several years. It seems to possess but little amylolytic activity, due probably to the contained alcohol. The use of malt extracts in the treatment of amylaceous dyspepsia has yielded some very good results, but we are limited to the solid extracts. The liquid extracts generally contain so much alcohol and acids, the results of fermentation, that the action of the diastase is inhibited. At the same time, however, the feeble diastatic power of even the best of them, generally about five times their weight of dry starch, the large amount of inert substances, their deterioration with age, and the fermentation which the large amount of sugar (maltose) which they contain may give rise to, are all disadvantages. Further, the pharmaceutical difficulties in the way of using them in mixtures, are obstacles, but not insurmountable ones, to their use in elegant pharmacy. Some years ago (1891) I noted that a malt extract containing diastase in large percentage had been made by Jokichi Takamine, the Japanese chemist, but I have been unable to find pure diastase of value in the market until during the past year. My skepticism in regard to the value of diastase in the form of a dry powder was based upon the low starchy converting power of a foreign preparation. When I found that a diastase had been isolated by Takamine, and its value certified to by Lascar, I again experimented with the substance. This preparation, according to Smith and Tonkin, is made as follows: Bran of ordinary wheat is sterilized by heat so as to destroy any and all germs which it may contain. After cooling it is mixed with the Japanese fungus, the *eurotium oryzæ*, known as *taka-moashi*, in such proportions as experience shows to be most favorable for the development of the diastatic fungus, *taka-koji*. This mixture is kept at the same temperature during the whole of the forty hours it takes the fungus to attain its full development. The *taka-koji* is then washed in cold water, after which the pure diastase contained in the latter is precipitated in the form of a tasteless, odorless, and nearly white powder. Experiments have shown that this diastase possesses the remarkable power of, within ten minutes, converting into sugar one hundred times its weight of starch (estimated in the form of a dry paste), and, within three hours, fifteen hundred times its weight of starch. Its activity is increased by raising the temperature up to 131° F., but no higher. This action is more marked in neutral or feebly alkaline solutions, but is entirely absent in acid or strongly alkaline media. Even when the conditions are in the highest degree favorable the action of the diastase ceases when a certain amount of sugar has been formed. On placing the solutions in a dialyzer, so as to remove the sugar as fast as it was formed, it was found that the action of the ferment more closely resembles the process taking place in the organism, and that a much larger percentage of sugar was obtained than without it.

Lascar has found that he can convert with this diastase one hundred to one hundred and fifty times its weight of starch into a soluble state. Under proper conditions this first named amount is so thoroughly converted in four minutes that neither the iodin test nor the microscope can detect unconverted starch. The starch employed in most of his experiments was carefully washed arrowroot. The final result is, to a great extent, maltose. In this connection especial mention should be made that an undue employment of heat will destroy the action of diastase. The powder, as found in the market, appears to be permanent, and is used in doses of from one to five grains, as a powder or in gelatin capsules, during or after the meal. Since there is a possi-

bility of the activity of this drug being impaired in its passage through the stomach, although Thompson believes that vegetable diastase continues to operate in acid media, it may be administered as a pill, coated with an alcoholic solution of shellac, keratin, or salol, but the objections noted above will hold here as well. This method, however, I have found to be necessary.

The following cases, which are briefly reported, illustrate the classes in which we may reasonably hope to derive benefit from the administration of this drug:

I.—July 2, 1895, H. E., aged fifty-six years, dry-goods merchant, has suffered for years with dyspepsia. The attacks occur chiefly during his busy season, when hasty luncheons and irregular hours are the rule. On ascending the stairs the dyspnea is so severe that speech is impossible. The eyes are yellowish, dull headaches occur almost daily, and one to three nights each week. The heart is irregular, both in force and rhythm, there is much hepatic tenderness, and the abdomen is resistant and painful on pressure which gives rise to gurgling. Ten grains of calomel with twenty grains of sodium bicarbonate gave several copious, foul-smelling motions. A pill composed of podophyllin one-quarter grain, iridin one-half grain, and enonymin one grain, was ordered for each night. Bismuth naphtholate, five grains with taka-diastase, three grains in powder was given after each meal. 19th. The passages being softer and no longer foul-smelling, the bismuth is now omitted. The sleep and palpitation are much improved. August 9th. The improvement continues, and although cardiac irregularity persists, he is not sensible that his heart is abnormal. September 19th. All medication is now withdrawn, excepting the diastase which the patient is positive is also unnecessary. October 5th. On accidentally meeting the patient he announces that he is feeling in excellent condition, having taking no medicine for the past week. This patient might be classified as a buccal dyspeptic.

II.—July 27th, R. C., aged forty years, a merchant attending to a large enterprise, besides representing his organization in attempt to influence legislation, has been a pronounced lithemic for several years. He has been under the care of several physicians, who have generally pronounced him to be *brightique* and have prescribed a vegetable diet. He complains of various neuralgic pains, languor, disinclination to exertion, irritability of temper, constipation and flatulence. The cardiac first sound is booming, the second accentuated. The urine of sp. gr. 1018, without albumin, sugar, or casts, contains much calcium oxalate and broken-down epithelium. He is directed to make use of a mixed diet, avoiding, however, potatoes, drink one to three pints of an alkaline water between meals, daily, and to take outdoor exercise, short of fatigue. In addition he is to receive taka-diastase in two-grain doses with one grain of citrated caffein after each meal. August 10th. The patient reports but little change save that the constipation and flatulence are better. September 22d. The temper and capacity for work are much improved, and the work is done with less exertion. October 30th. The urine is now of sp. gr. 1022, with nothing abnormal excepting some calcium oxalate. December 9th. The patient reports great improvement over his condition six months ago and feels that he can dispense with medicine.

III.—July 30th, V. E., aged fifty-six, army officer, has been troubled for several months with morning nausea, constipation, distention of the stomach and bowels, more marked two or three hours after eating. There was dyspnea on exertion at all times, but after meals this became more marked, and with it was noticed palpitation. The patient was fleshy, a large eater, and was accustomed to the regular use of whisky in considerable amount, but never to the extent of inebriation. Physical examination revealed an irregular and intermittent pulse, a shortened, high-pitched and metallic first sound of the heart, an accentuated pulmonic second sound, a small liver, the area of flatulence being still more diminished because of the tympanitic percussion note which extended over the entire abdomen; the urine contained a trace of albumin and bile. The diagnosis was, fatty heart, cirrhotic liver, and duodenal indigestion. The patient was directed to limit his starchy foods, bread, potatoes, puddings, and diminish the amount of whisky, and at the same time dilute it. The sodium phosphate mixture was ordered for the morning, a pill of strychnin, one-twentieth grain and nitroglycerin, one-hundreth grain, to be taken thrice daily and immediately after eating, taka-diastase five grains in gelatin capsules. August 10th. The patient reports that the flatulence had markedly diminished, and with it the palpitation and dyspnea after meals; the constipation was lessened. The conditions, as found on physical examination, are as before, excepting that the abdominal distention and tympanitic percussion were not so marked. September 12th. The improvement has continued as regards the digestion, although the cardiac symptoms are but little better. October 1st. The constipation is so far relieved that the sodium phosphate can be omitted. The cardiac dyspnea is marked, and insomnia has become a prominent symptom. Beer is now used to the exclusion of whisky. 14th. Albumin has increased in the urine, and the cardiac symptoms are more severe, although the patient has a better appetite and does not complain of indigestion. The diastase is now reduced to two grains per dose. 25th. No dyspeptic symptoms are elicited upon questioning, therefore the diastase is omitted. November 16th. The circulatory disturbances are increasing, necessitating frequent

changes in treatment. About two weeks after this report the patient died quite suddenly. This patient suffered from incurable diseases of heart and liver, yet the betterment of his dyspeptic symptoms was too pronounced to be attributed solely to change in diet or to other medication.

IV.—August 20th, W. L., aged forty, lawyer, consulted me to be relieved of excessive flatulence, accompanied by constipation, which had existed for four weeks. He stated that he was a rapid eater, fond of bread and pastry, but of good habits. Physical examination revealed nothing but a sensitive and tympanitic abdomen. He was thin, nervous, and energetic. The urine showed an excess of alkaline phosphates. The sodium phosphate mixture was given, and five grains of taka-diastase in capsules with meals. Besides, the food was to be eaten slowly, masticated thoroughly, and the fluids at meals limited to twelve ounces. September 24th. The patient has been in the country since his first report, and states that he is greatly improved, but that at times only is he annoyed by flatulence. Sodium phosphate is to be omitted. October 17th. The symptoms are now entirely relieved, the urine is normal, and the diastase is omitted. This patient suffered from buccal dyspepsia, and a portion of the relief, at least, was brought about by regulating his habits of eating.

V.—August 3d, H. S., aged forty-four, builder, three days ago, while bathing, suffered from cardiac pain, oppression, and vertigo. For some months he had noticed abdominal pains after meals, flatulence, and dyspnea. At times his vertigo was so severe that he was unable to go about unfinished buildings. The patient was very stout, but his color was good. He was a hearty eater, and was much of his time in the open air. Beyond a rapid and slightly irregular heart-beat, nothing was found. The abdomen was fleshy, yet gave tympanitic resonance in the epigastric region. The liver was distinctly felt below the ribs. The patient's habits as regards large amounts of beer were corrected, and he was given taka-diastase in six-grain doses in capsules. 10th. The patient returns, complaining that the capsules gave rise to great irritation of the stomach, with nausea, and followed by vomiting. The dose was diminished to four grains and given in powder form. One-sixth of a grain of mercurous iodide (yellow) was given each night, and a half glass of Villacabras water in the morning. September 14th. The vertigo, flatulence, and breathlessness are improved. October 27th. The iodide and mineral water can now be omitted. The diastase is to be diminished to three grains during a continuance of the improvement. December 14th. The patient experiences so excellent health that all medication is omitted.

The foregoing cases, with a number of others, have been under observation a sufficient length of time for arriving at a fair conclusion as to the value of the remedy. In but two instances have been noted any markedly unpleasant results from the administration of diastase. One is recorded above; the other was of a young man who came to me suffering from acute intestinal indigestion from dietary indiscretion, whose symptoms were apparently unchanged, excepting increased nausea, after the administration of the remedy.

Nor am I certain as to the proper dosage; it is possible that one or two grains may be amply sufficient; on the other hand, I know of no reason why the maximum dose (six grains) as given above, may not be exceeded with safety. Theoretically that amount should be ample. Personally, I have come to prefer its administration in the form of a powder, and in that form it seems to retain its properties. All important is the diagnosis, that it shall be exact. Accessory means for the relief of by-symptoms should not be neglected.

We may fairly conclude that taka-diastase is useful:

1. In many cases in which the symptoms were wrongly attributed to proteid indigestion.

2. In the vast majority of cases as a substitute for the inefficient pancreatic extracts, malt mixtures and various combinations hitherto employed.

3. For the same relief of amylaceous dyspepsia, which, in the case of proteid indigestion, is obtained by acids and pepsin.

4. As a successful method by which the patients can preserve their nutrition upon a mixed diet.

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TARSAL DEFORMITIES IN CONGENITAL TALIPES EQUINO-VARUS.

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The various forms of congenital club-foot may be thus classified for convenience of study:

Simple	Lateral	Varus. / Valgus.
	Antero-posterior	Equinus. / Calcaneus.
Compound	Equinus	Varus. / Valgus.
	Calcaneus	Varus. / Valgus.
Other forms	Cavus.	
	Planus.	
	Non-deforming (Shaffer).	
	Neuromemesis.	

As the non-congenital forms are not to be con-

sidered in this paper, they will be dismissed with the simple mention of their grand divisions: simple acquired, paralytic, and traumatic.

The proportion of cases of club-foot to all births is 1 to 806. Talipes equino-varus is by far the most frequent—three-fourths of all cases occur in both feet oftener than in one, the right oftener than the left, and is almost twice as frequent in males as females.

The etiology is wrapped in obscurity, its elucidation depending upon the data furnished by comparative physiology, pre-natal disease, and embryological research. In this there is found a vast field for theoretical speculation. The cause has been variously estimated under the heads of maternal impressions, of which no case has been reported; and heredity, which has undoubted influence, but is not generally traceable except in marriage of blood relatives. Statistics show one in 164 of the latter, against one in 1903 births from other marriages.

The chief theories are: (1) that of mechanical or intra-uterine pressure; (2) that of pre-natal disease or the musculo-nervous theory, and (3) the arrest of development or osseous theory. All of these have fallen into the background to give place to the fourth of non- or retarded rotation, which is the latest. It is based upon embryological research and offers the best explanation yet advanced, being demonstrable, feasible, and scientific. It was first proposed by Berg, of New York,[1] announced independently by Parker and Shattuck,[2] confirmed by Schudder,[3] and is favored by Bradford and Lovett, Roberts, Ketch, Young, and others.

In his experiments Berg observed the position of the lower extremities at different periods of fetal life, and found that from their position (crossed and flexed) that all intra-uterine pressure was brought to bear directly upon the outer border of the leg and dorsum of the foot, causing the position of equino-varus, which he believes to be a stage in the normal development of every fetus. Its permanence is obviated by nature providing an inward rotation of the extremity, carrying the leg away from the abdomen of the fetus, placing the feet against the utering walls in extreme flexion, and the force of intra-uterine pressure directly upon them. The correction of this early varus depends upon the completeness of internal rotation, and upon its failure or incompleteness depends the deformity.

There is marked alteration in all the structures except the muscles, which at birth are almost always healthy, but soon atrophy from disuse. The deformity is a displacement inward of the anterior part of the foot; the displacement occurring at the medio-tarsal articulation and accompanied by alteration in form and position of the astragalus and os calcis. The scaphoid is not altered in form, but is drawn upward, inward, and backward by the tibialis posticus, the tibialis anticus and the extensor proprius pollicis muscles articulating with the inner side of the head of the astragalus, and may, in severe cases, articulate with the tip of the internal malleolus. A separate synovial sac has been found in this locality by Bradford and Lovett. The astragalus is rotated on its antero-posterior axis, tilted downward and forward, the tibia only articulating with the posterior part of its superior facet; while the anterior portion of this surface becomes prominent on the dorsum of the foot. The head and neck are turned obliquely inward and closely resemble the os calcis of apes, as described by Parker. "The normal angle, formed by a line drawn parallel with its external border and the sagittal axis of the body, amounts at birth to an average of 38 degrees, and in the adult healthy foot 26⅙ degrees. In congenital equino-varus it varies from 64 to 31, the average being 49.5 degrees. Owing to this obliquity the articular head is directed antero-laterally and has two facets instead of one, the larger of which articulates with the displaced scaphoid."[4]

The complex nature of the deformity, coupled with its frequent occurrence, renders at once apparent the necessity for an universal treatment, or, in other words, a treatment that is within the reach of not alone the orthopedic surgeons but the general practitioners as well. In the treatment of congenital club-foot there is no established rule, for the method the surgeon best knows is apt to give him the best result. Early in 1893, Dr. Gibney, surgeon-in-chief to the Hospital for Ruptured and Crippled, New York, called the attention of the hospital staff to the Wolff method of using plaster-of-Paris, and at his suggestion the treatment was carried out. The attention of the profession was first called to the Wolff method in a paper read before the Association of American Physicians in Berlin by Dr. Freiberg, of Cincinnati, and published in the Medical News October 29, 1892. Wolff first anesthetizes his patient, except in very young children, and in slight degrees of club-foot, and then by manual

[1] *Archives of Medicine*, December 1, 1882.
[2] *British Medical Journal*, 1886, Vol. II, p. 10.
[3] Boylston Prize Essay, *British Medical and Surgical Journal*, October 27, 1887.
[4] Young.

force brings the foot into as nearly the proper position as is possible without using undue force, and while it is held in this corrected position by an assistant, strips of rubber adhesive plasters are applied spirally around the foot, extending well above the ankle. This is done to aid in holding the foot in the corrected position until plaster-of-Paris is applied. As used in the cases here reported the treatment has differed from that first practised only in the omission of the anesthetic. As no attempt was made in these cases to reduce the deformity at the first sitting, no anesthetic or adhesive plaster was necessary. There is no difficulty experienced, even with the most ordinary assistance in applying the dressing, after which the patient remains undisturbed for twenty-four hours, when *redressment* can be commenced safely. Pain is most marked in the beginning of treatment, and for this reason only a little of the deformity should be corrected at the first two or three sittings. It is best at all stages of treatment to regulate the amount of twisting by the pain produced. In applying the dressing, first place a piece of double-faced canton-flannel along both the outer and inner borders of the foot extending over the malleoli. This offers protection to the bony prominences, which is especially required over the metatarso-phalangeal joint of the great toe and over the cuboid bone. Now two thicknesses of single-faced canton-flannel bandage are snugly applied to the foot and leg, extending to and including the tuberosity of the tibia. The plaster is now applied, extending quite as high as the bandage, thus grasping the tibial tuberosity, it prevents rotation which allows of effectual *redressment.* To avoid pain and swelling the toes should be kept in their normal relation to each other, only their tips should be exposed. The amount of plaster used is governed by the size of the member, usually one and one-half or two ordinary bandages will suffice, and should be applied in the usual manner. Now by grasping the leg in one hand and holding it firmly on the table the plantar surface is made flat by firm pressure with a small board in the other. This corrects some of the deformity and furnishes an even surface on which the child can walk. Real treatment, as before stated, is begun twenty-four hours after applying the dressing, as above indicated; first by cutting out a wedge-shaped piece of the plaster over the most prominent part of the deformity, the angles of this opening being united by a linear cut through the remaining plaster. In making this section, care should be taken not to pass so near the heel as to permit it slipping when the foot is twisted. But little force is now required to oppose the edges of the wedge-shaped opening in the plaster and effectually overcome a part of the deformity. The foot is held in this new position by an assistant while another bandage is applied by filling the space on the inner side of the foot with folds of the bandage, and carrying the whole by a figure of 8 around the foot and ankle. This holds the foot firm until the next treatment, when it is easily peeled off from the primary dressing which was dry when the stay bandage was applied. The succeeding treatments are done by simply enlarging the wedge-shaped incision and applying a new stay bandage. After three or four stretchings it will be found necessary to apply an entirely new dressing. When excoriations occur, and they are liable to be the result of pinching the skin, it is necessary to discontinue the treatment for some time, as excoriations from this cause are very difficult to heal. Continue the treatment until the foot is in the position of over-correction and then encase it in a silicate of soda dressing strengthened by a piece of light steel passing from the ball of the foot above the heel. Over this a shoe is worn. Wolff continues this dressing for six months.

Case I.—Norman M., aged 4½ years. Double equino-varus. Stands on outer border of left foot, with 45 degrees of inversion; right about 25 degress of inversion. July 15th, has Achillotomy, plantar fasciotomy, and twisting with Thomas' wrench of both feet. August 26th, has 35 degrees inversion of right and 15 or 20 degrees of left foot. Wolff method commenced. September 9th, deformity of right foot corrected at four

Case I.

BEFORE. AFTER.

sittings. September 15th, deformity of left at at eight sittings (see photograph before and after treatment).

Case II.—Robert C., aged nine years. Right talipes varo-equinus marked pes cavus. March 17th, Achillotomy, fasciotomy, and twisting with Thomas' wrench. April 24th, foot partially cor-

rected 30 degrees; cavus remaining. July 20th, after six weeks' *redressment*, practised bi-weekly, varus is corrected; cavus still present. Treatment discontinued six weeks on account of an excoriation. September 25th, cavus corrected.

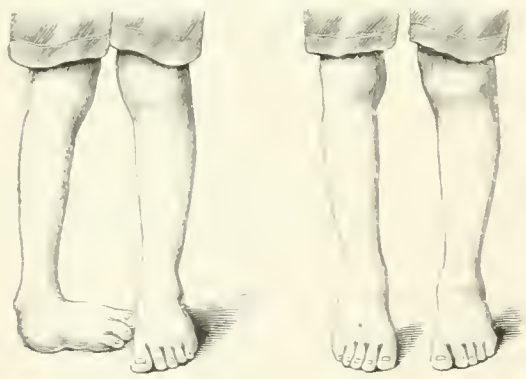
Case III.—W. C., aged eight years. Left equino-varus. Had Phelps' operation in Bellevue in 1891. September 10, 1892, stands with external border of foot on floor, in extreme inversion. March 24, 1893, has had ether five times since admission. The foot twisted with Thomas' wrench and plaster applied each time; 25 degrees of varus still present. Wolff treatment commenced to-day, May 15th, has had *redressment* once a week for past seven weeks. Varus entirely overcome.

Case IV.—Chas. B., aged eight years. Double equino-varus. Left foot has 35 degrees of varus; right 45 degrees. March 21st, etherized; left Achillotomy, plantar fasciotomy, and twisted with Thomas' wrench. Right foot has Wolff method commenced. April 10th, left foot again twisted with Thomas' wrench and put in plaster. April 20th, both feet over-corrected. Right foot has had Wolff method bi-weekly.

Case V.—W. S., aged six years. Left equino-varus 45 degrees inversion. March 25th, Wolff method commenced. June 1st, deformity entirely overcome. Has had *redressment* bi-weekly. Discharged from hospital with foot in plaster and silicate of soda case.

Case VI.—Louis S., aged eight years. Left equino-varus. November 8, 1892, astragalus removed. January 10 and February 20, 1893, under ether; foot twisted with Thomas' wrench. March 14th, Wolff treatment begun; 35 or 40 degrees of varus remaining. April 15th, deformity corrected. Had *redressment* bi-weekly.

Case VII.—R. B., aged 4½ years. Right equino-varus. No previous treatment. August 30th, stand on outer border of foot. Over cuboid bone is callous, size of quarter dollar. Toes point directly across to inner border of opposite



Case VII.

BEFORE. AFTER.

foot. Wolff treatment commenced. October 1st, inversion of foot corrected; had *redressment* tri-weekly; thirteen sittings (see photograph).

Case VIII.—A. T., aged nine years. Left equino-varus. Has had no treatment. Stands on outer border with foot turned to right angle at medio-tarsal joint. September 13th, Wolff

Case VIII.

BEFORE. AFTER.

treatment commenced. October 17th, deformity corrected. *Redressment* tri-weekly for past four weeks (see photograph).

Case IX.—D. P., aged 8½ years. Double equino-varus. Had double Achillotomy when three years old. June 13th, walks on outer border of the feet; toes pointing across to opposite foot; feet are inverted to right angle; has astragalotomy and Phelps' operation on left foot; right foot has Achillotomy, fasciotomy, and twisting with Thomas' wrench. August 9th, 45 degrees inversion of each foot. Wolff treatment commenced on right foot. September 20th, deformity of right foot corrected; eight sittings. October 15th, deformity of left foot corrected in eight sittings.

Case X.—Geo. H., aged twelve years. Talipes equino-varus. Had tendo-Achillis divided when two years old without benefit. November 4th, stands on outer border of foot; weight on cuboid bone, where there is a very large callous, the size of silver dollar; right angle deformity at medio-tarsal joint. April 21st, deformity entirely overcome; weekly *redressment* since admission.

The treatment of these cases necessitated a great amount of patient labor, but one should, I think, feel amply repaid for his trouble when such results can be reached without, in some cases, using either anesthetic or knife; consequently no risk of an operation. The tendency to rapid recurrence in these deformities when left unprotected strengthens the importance of over-correction, and this cannot be too strongly urged. Therefore convert the equino-varus into a calcaneo-valgus and hold it there until this new position becomes permanent. There is no better way of doing this than by the means here advised and its cheapness and efficiency are points which commend it to the profession.

HYPERTROPHIC CIRRHOSIS WITH JAUNDICE.[1]

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The subject which I offer for your deliberation to-night is one of considerable interest to the clinician and pathologist; an interest heightened by the yet debated question of the right of this disease to a name, or to any consideration as an independent affection. For there are those who assert that there is no such thing as hypertrophic cirrhosis, *per se*, and that the clinical and *post-mortem* determination of an enlarged and hardened liver by no means justifies any distinction between this and the common variety of atrophic cirrhosis, of which it is to be regarded as an early stage. Against this view I hope to offer some evidence convincing to me, however it may impress the audience—evidence furnished in part by the liver itself; in part by the brief history of a case; in part by an examination of the literature on the subject.

Originally described as a separate nosologic entity by Todd, it is mainly to the labors of the French school that we owe our recognition of the distinctive clinical and pathologic features of this affection. Charcot and Gombault, Hanot, Tissier, Dieulafoy, Jaccoud and Cornil, with many others who have contributed less prominently, are permanently identified with the graphic, one might almost say classic, descriptions of the disease. In Germany the acceptance of the doctrine of its independent character has found slow progress, and even now the principal opposition to this view is found in the writings of German teachers. In England a number of cases have been reported; comparatively few, however, in this country. On this account and because of a recent opportunity to examine the body of a patient dying from hypertrophic cirrhosis, it has seemed proper to again call attention to the subject.

The history of the case is about as follows:

The patient, a young woman in her twentieth year, of good physical development, and correct habits, noticed, about two years preceding her death, slight jaundice. Accompanying this were the usual gastric disturbances, loss of appetite, anorexia, and weakness, as well as cutaneous itching. The patient continued her work, being employed in a mercantile office, but suffered pretty constantly from the jaundice, which would grow more or less intense, from time to time, without apparent cause. Some time after the onset of the jaundice there occurred severe attacks of epistaxis, in the course of which the loss of blood became very great; so that the anemia added another element to the exhaustion of the patient. There was another rally and then pain and heaviness began to be felt in the right side. Finally came fever, typhoid in character, continuous, with tolerably high range; intense jaundice, the skin assuming that olive green color described by the French as grave icterus; the urine becoming brownish-black, depositing an abundant sediment of urates upon standing, the stools being frequent and of rather darker color than normal; only at rare intervals was a lighter color observed. Both liver and spleen were greatly enlarged. The border of the liver could be easily felt through the relaxed abdominal wall, some three inches below the costal margin in the mammary line. Its upper boundary, determined by physical examination, was found at the lower margin of the fifth rib. The surface of the organ was smooth on palpation, the enlargement apparently uniform, so that the proper relation between right and left lobes was maintained, the edges being sharp and clearly defined, without nodosities or irregularity. The spleen was enlarged to about twice its normal size.

Toward the end, curious nervous symptoms developed. There was aphasia, with partial recovery; slight hemiplegia, delirium, stupor, coma, and death, four days after the sudden aphasia.

A complete autopsy was not permitted, the examination being restricted to the abdominal cavity. The liver, greatly enlarged and of a very dark olive color,[1] projected below the margin of the ribs. Its surface, smooth in appearance at the first view, was found to be slightly uneven, there being a number of minute projections, rather spherical in character.

The enlargement seemed to be uniformly distributed, and the enlarged liver retained its regular outline and proportions. It was very firm to the touch, but was cut without difficulty, though the resistance to the knife was greater than would be encountered in normal liver tissue. The gall-bladder contained an unusual quantity of dark bile, more limpid than normal. Upon opening the duodenum and pressing upon the gall bladder, the biliary passages were found to be free from all obstruction, the bile emerging readily from the papilla of Vater.

The cut surface of the liver was smooth, and presented the same greenish-black hue that had been remarked at the surface. There was no mottling, no variety of color. The tissue throughout presented the same appearance. The spleen was firm, its capsule slightly thickened. The parenchyma was dark in color, dry upon section. A pocket of enlarged lymphatics, slightly red in color, was found behind the portal fissure. Upon microscopic examination the structure of the glands was apparently unaltered.

[1] Read before the Cincinnati Academy of Medicine, October 13, 1895.

[1] Even after hardening in alcohol the liver retained this greenish color, making it look as though it had received preliminary treatment with a chromium solution.

The chief interest centered in the microscopic examination of the enlarged liver. A diagnosis of hypertrophic cirrhosis had been made *ante-mortem*, and the sections presented to-night testify to its correctness. A very full and accurate description of the so-called biliary hypertrophic cirrhosis is given by Hanot and Schachmann, appended to the history of a typical case of the disease observed in the service of Professor Proust. The microscopic details might have been taken from the sections presented for your inspection.

Upon examining the sections with a low power, the most striking and evident change is the enormous increase of the connective tissue. In all directions bands of this new-formed texture traverse the field, now surrounding the lobules entirely, now dipping into the substance of the lobule, to terminate in a roundish, bulbous extremity, like the head of a serpent, as Hanot has it, or sending single filaments across the periphery of the lobule, by which one or two cells are cut off from the rest, to undergo ultimate extinction, an intra-acinous distribution.

With the low power, too, another fact is strongly brought out, namely, the integrity of the secreting structures of the gland proper, of the liver cells. It will rarely happen in a section of perfectly normal liver tissue, taken from a subject dying of disease unconnected with hepatic changes, that the liver cells will be found so little impregnated with fat, so homogenous in their protoplasm, and with nuclei so clearly defined. It is this striking immunity of the liver cells, more perhaps than some of the other details presently to be described, which is specially characteristic of biliary hypertrophic cirrhosis. We shall see that there may be increase of connective tissue from other causes; but in all such instances it will be found that this increase goes hand in hand with degenerative changes of some sort in the liver cells.

Under the low power, the relation of the vessels and ducts can also be seen to be materially changed. The larger trunks of the portal circle, imbedded in the connective tissue separating the lobules, show no very marked changes. Their walls are loosely attached to the new-formed texture, and, while slightly thickened, do not present that degree of infiltration and puckering so evident in the alcoholic variety. The arteries show no special change. It is, however, apparent that the bile ducts have undergone a decided change. When seen in longitudinal section the epithelium is larger, the ducts, crowded with cells, ramify in various directions and their lumen is wider than normal; in cross section, the ducts are found to be surrounded with many concentric layers of new-formed connective tissue far exceeding in thickness the coats of either vein or artery, and often that of the calibre of the involved duct itself. In many localities the tissue immediately surrounding the ducts is the seat of a round-celled proliferation, indicating probably the earliest stage in the process of connective tissue overgrowth.

The capsule of the liver shows no special thickening, but very gentle depressions occur at the boundaries of subjacent lobules, where strands of connective tissue find attachment to the capsule.

With the high power, the characteristics just referred to can be more readily distinguished. The liver cells, with sharply defined outlines, clear, distinct nucleus and homogenous protoplasm, are, perhaps, even of slightly larger dimensions than in the normal liver. Hanot claims that this is the rule in biliary hypertrophic cirrhosis; the point is disputed by Ackermann and others. Whether enlarged or not, it is very evident, with the greater magnifications, that they have, for the most part, remained unscathed by the pathological process around them. They extend to the very edge of the interlobular connective tissue growth, and it is only at the boundaries of the lobule that they may occasionally be seen, slightly flattened and misshapen, less deeply tinged with the staining fluid, and with a faintly outlined nucleus. The normal arrangement of the cells in columns has also been preserved. Here and there, instead of distinct lobules, small groups of cells, ranging from two upward, will be found imbedded in a dense overgrowth of connective tissue. These have been cut off from some neighboring lobule by the shoots of new tissue that grow into the lobules from the periphery, finally reaching across the lobule, so that these become segmented. It is this subdivision of some of the lobules into smaller aggregations of cells that explains the difficulty of locating the hepatic radicle, which, when present, is found to preserve its normal relation to the surrounding liver cells, its walls showing no thickening.

The connective tissue, while not peculiar, is still very different in appearance from that observed in other forms of cirrhosis. It has been compared by Brissaud to the peculiar spongy, neuroglia-like product that is seen in the brain and cord in disseminated sclerosis. It has comparatively little tendency to fibrillation; its spindle cells retain their contour, without elongation; and the greater portion of it, as seen in its more recent stages, dipping into the lobules, consists of a faintly granular homogenous structure, having no sign of organization. It is probably this peculiarity which explains the integrity of the liver cells. The new growth, soft and spongy, insinuates itself between the lobules, or, it may be, between the cells, merely crowding them aside to make room for itself, but not otherwise exercising much pressure upon them, its growth being so gradual that the capsule is slowly distended, and the nutrition of the cells unimpaired. The round-celled infiltration, already alluded to, is found with the high power to consist of young cells, staining readily, and arranged particularly around the biliary ducts, as though the irritation leading to the new formation had started there. The epithelium of the ducts remains unchanged; its distinctively cylindrical character is plainly evident, the calibre of

the ducts is sometimes open, sometimes crowded with cells as from a catarrhal proliferation. Nowhere is there any evidence of biliary pigmentation or obstruction, such as can be seen in another specimen which I present. A number of small secondary biliary vessels of new formation are also seen in the connective tissue; and the columns of liver cells are separated in places by spaces corresponding to the dilated biliary radicles.

With these lesions and these symptoms, can we substantiate the claim of biliary hypertrophic cirrhosis to be regarded as an independent disease? Most assuredly. Clinically we have the following facts:

1. The tender age of the patient. From an examination of the literature of the subject, consisting for the most part of case reports, with occasional account of a microscopic examination, it will be seen that nearly all cases belonging strictly to this category are under 40 years of age, the majority below 30. The two sexes appear to suffer in nearly equal ratio. Children are not exempt. Thus, Smith[1] reports a case in a child of 4½, without hereditary history of syphilis or alcoholism; Florrand,[2] case in man aged 19; White,[3] case in child aged 9, the liver weighing 41 oz.

Hatfield[4] reports a case in a new-born infant.

2. The long duration of the illness. There is the history of suffering, extending as a rule over several years. In the case from which the sections are taken, symptoms referable to the liver disease occurred at least four years before death. The average duration is given at from two to four years.

3. The early occurrence of jaundice, with gradual increase in the intensity of the bile staining, and death at the close of profound nervous disturbances, generally attributed to cholemia. The jaundice may be so slight as to attract but little attention at first; it may lead to pruritus, more or less intense; there may be exacerbations and remissions, but it rarely disappears entirely, even for a short period. With the jaundice—and this point deserves special emphasis—there is diarrhea (from four to eight stools in the twenty-four hours), the stools being liquid or mushy, and either of the normal color or of a deeper brown, showing that bile freely enters the intestine. The patency of all the biliary passages, and the fact that the gall-bladder is generally found to contain more than the usual quantity of bile at the autopsy, plainly shows that the jaundice is not obstructive in origin, as was once asserted.[1]

It is to be remembered that jaundice is an occasional manifestation in the course of atrophic cirrhosis; but the fact that Mangelsdorf, quoted by Freyhan, in trying to make this symptom wholly lacking in diagnostic significance, was able to collect in the whole literature of the subject only eight cases of atrophic cirrhosis with jaundice, goes further than all else to show its very exceptional appearance in that disease.

4. The absence throughout the entire affection of the usual signs of portal obstruction. There is, in the history of the disease, neither the enlargement of the superficial abdominal veins, the formation of the so-called caput medusæ, nor ascites; and though it should appear from an examination of the specimens in our own case that the portal vessels imbedded in this immense overgrowth of new-formed connective tissue must have their walls compressed, the circulation goes on without evidence of impediment; so that Ackermann was able to inject the liver from the portal vein, the fluid, tinged with Prussian blue, passing freely into the hepatic radicles in all parts of the liver substance.

5. The occurrence of severe hemorrhages from the mucous surfaces at a comparatively early period. Epistaxis, so severe as to be alarming, occurred several times in the case here reported. A similar fact has been noted in others. Hematemesis, melena, bloody urine, and vaginal hemorrhages have been reported.

6. The development of febrile attacks, of variable duration, resembling in type either remittent or typhoid. This feature is not invariably associated with the disease, but is by no means uncommon. When fever develops and is associated with pain and gradual enlargement, it is easy to mistake the condition for hepatic abscess. Jaccoud and Molénes report cases occurring in their respective practices in which this mistake was made, and the supposed abscess repeatedly aspirated, the needle only withdrawing blood.

7. The tendency to progressive and extreme enlargement of the liver, with pain in the right hypochrondrium, fulness and weight, and manifest increase in the circumference of the abdomen, just below the costal margin. As a concomitant of the hepatic enlargement, the spleen is also increased in size. The hepatic enlarge-

[1] *Trans. Path. Soc. Lond.*, Vol. XLI.
[2] *Progrès Med.*, 1885.
[3] *Path. Soc.*, Vol. XXXVI.
[4] *Trans. Am. Pediatric Society.*

[1] Musser (*Am. Jour. Med. Science*, 1884) is, I think, in error in stating that the term *biliary* is applied to these cases because of obstruction of the duct

ment, while generally uniform, may involve one or other lobe in preponderating degree. The weight of the organ many reach nine pounds and over.

8. The inevitable tendency to a fatal termination.

9. The inability to refer the development of the disease to alcoholic excess, in all but a small proportion of properly classified cases. I am aware that upon this point issue is likely to be taken, yet an examination of cases hitherto assigned to this category will convince any impartial critic of the correctness of the statement. It will be seen that many cases occurring in patients addicted to alcoholic excess, designated as hypertrophic cirrhosis, have either presented ascites and other evidences of portal obstruction during life, or have shown, after autopsy, under the microscope, very advanced fatty changes in the liver cells. It will also appear that in nearly every instance the age of the patient has been 50 or above in male patients, though females seem to suffer at an earlier age from the effects of alcoholic excess, as regards hepatic enlargement.

Now, the term cirrhosis was originally introduced by Laennec merely to designate a peculiar color change in the liver. It has received wider application in that it has been used to designate not only those conditions of the liver characterized by connective tissue overgrowth, but is employed as a generic term to denote a pathologic process in which this proliferation is the main feature, so that we speak of cirrhosis of the kidney, of the lungs, of the pancreas, etc. If then, all cases in which, with the new development of connective tissue, there is increase of size in the liver shall be termed hypertrophic cirrhosis it will become necessary to employ a second qualifying adjective to indicate more clearly the nature of the enlargement. For increase of connective tissue, with hepatic enlargement, occurs under divers conditions, so that we have a hypertrophic cirrhosis from venous engorgement in cases of valvular disease of the heart, the nutmeg liver; from syphilis; from malaria; from permanent obstructions of the common duct, as by the impaction of a gall-stone, or by cancer of the head of the pancreas; from fatty change with cirrhosis, as the result of chronic alcoholism, and from diabetes. I am fortunately in position to show you examples, under the microscopes set up in the adjoining room, of the histological changes wrought by each of these different causal elements in the liver tissue, in contrast with the changes of so-called biliary hypertrophic cirrhosis.

The nutmeg liver shows the new growth plainly radiating from the hepatic radicle, the portal vessels and gall ducts being perfectly free, the liver cells, however, undergoing some degeneration, the walls of the hepatic vessels being greatly thickened. The syphilitic induration has not the regular distribution of the other forms, but presents a ribbon-like development, in which there may often be found minute gummata; sooner or later there comes, in this form, marked cicatricial depressions and irregularity of the capsular surface. In chronic malaria there is deposit of masses of black pigment between the cells.

In chronic biliary obstruction there is marked irregularity in the size and outline of the liver cells; the nuclei are not clear, the protoplasm stains imperfectly; the minute biliary radicles between the cells are enormously dilated, and filled with inspissated bile, which appears on the sections as patches of a greenish or brownish color. The bile ducts are surrounded by some new formed tissue which has neither the regular distribution nor the bulk of the connective tissue in the disease we are studying. I would call attention to this fact particularly, since Charcot, influenced by what he observed as the result of ligature of the common duct in the lower animals, proposed for this affection the name of biliary hypertrophic cirrhosis, a name that we still retain, though it does not in any way fit the pathology, seeing that the larger bile ducts are always open.

The cirrhotic liver with fatty degeneration shows such a degree of fatty change in the liver cells that its recognition requires no further explanation. In diabetes, Hanot and Chaufford noted the rare occurrence of hypertrophic cirrhosis, with pigmentation of the liver cells; as yet, but six cases of this variety have been reported.

Hanot, Sabourin, and others have given to some of these varieties a special name, which I think it would be well to retain in future description. Thus we may designate—

As biliary hypertrophic cirrhosis, the affection we study to-night;

As syphilitic hypertrophic cirrhosis, the cases due to this specific poison;

As obstructive hypertrophic cirrhosis, the cases resulting from closure of the duct;

As fatty hypertrophic cirrhosis, the enlargement due to chronic alcoholism;

As pigmentary hypertrophic cirrhosis, the cases occurring in diabetic patients;

As congestive hypertrophic cirrhosis, the cases resulting from heart disease, the nutmeg liver;

As malarial hypertrophic cirrhosis, the cases due to chronic malarial poisoning.

The recognition of the particular variety present in any given instance has a manifest bearing on prognosis and treatment.

Up to this time the treatment in all cases of biliary hypertrophic cirrhosis has been unsatisfactory; but the results obtained in the fatty hypertrophic cirrhosis with calomel, given according to the plan of Saccharjin, would certainly justify its employment in this affection, however different the two processes are in point of causation.

A final word as to the pathology of the disease. It seems clear, from an inspection of the specimens, that the essential feature is primarily an inflammation in and about the biliary ducts, angio-cholitis, and peri-angio-cholitis. What determines this is not yet clear. Vincenzi's theory of a micro-organism wholly lacks corroboration; but once begun, the process goes on within and outside of the biliary vessels, leading to cellular proliferation and partial or complete blocking within; to formation of a young and rapidly growing connective tissue without the ducts. The circulation meanwhile is unimpaired, so that, with the proper advent of blood, and with perfect integrity of the secreting cells, bile continues to be freely formed. It may be formed in excess, as Ackermann believes, in consequence of the irritative process in and about the hepatic lobules. The blocking of some of the minute ducts offers obstruction to its passage; the patency of others permits the outflow of a sufficient amount to distend the gall-bladder, and give to the feces their normal color. Where the ducts are blocked, resorption of the excreted bile occurs, leading to jaundice, and finally to cholemia. This is the theory of Charcot, essentially modified in detail by Ackermann, whose views upon the subject seem to fit the case more nearly than any other explanation offered up to this time.

I would refer once again to the fact that biliary hypertrophic cirrhosis cannot be considered as, in any sense, connected with the ordinary atrophic variety; that it differs in important particulars from other forms of hepatic enlargement, due to connective tissue growth; and that by every right of etiology, pathological anatomy, and symptomatology it must be conceded a position in our nosology.

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CLINICAL LECTURE.

TRAUMATIC CATARACT.

By S. D. RISLEY, M.D.,
of Philadelphia.

When I had the pleasure of meeting you last, I presented for your study the more common forms of cataract. These, we saw, were the soft and hard cataracts, the former occurring in early life for the reason that the lens was then elastic and soft. With increasing years it increases in density, loses the power of changing its form, as it is able to do in youth, and becomes hard. But this we saw was a physiological process and had no necessary relation to loss of transparency, but that when opacity did occur from any reason the result was a hard cataract. I further urged upon you the fact that opacity of the crystalline lens is not necessarily a concomitant of old age, and should not therefore be classified as senile cataract. Common observation shows that even in advanced age, cataract is the exception, so that we are driven to conclude that when it does occur there must be some special cause for its occurrence. This, I told you, would be discovered in the impairment of the nutrition of the lens by disease of the intra-ocular tunics, usually affections of the choroidal tract, either of purely local origin, as in cases of choroidal disease due to eye strain, exposure to heat, etc., or associated with some general dyscrasia.

To-day I wish to bring before you a group of cases

[1] Delivered at the Philadelphia Polyclinic College for Graduates in Medicine, February 28, 1896.

which will serve as a text for the study of traumatic cataract.

Opacity of the lens due to injury may, for purpose of study, be placed in two groups. First, those which have been caused by penetrating wounds; and second, by blows which have caused the rupture of the lens capsule and its suspensary ligament.

It is well known that whenever the aqueous humor is allowed to come in direct contact with the lens cortex that it first causes it to swell, then to become opaque, and finally has the property of dissolving it, after which it is carried off through the filtration channels and absorbents. The surgeon frequently takes advantage of this fact in his treatment of the soft cataracts of youth and early middle life. Now any injury, therefore, which rends the delicate capsule of the lens, causes it to become cataractous, and if the rent is sufficiently extensive, may bring about the absorption of the entire lens. It not infrequently happens, however, that the opening speedily closes after admitting sufficient aqueous to render it wholly or partially opaque, but not sufficient to cause its solution, leaving a permanently opaque lens—a traumatic cataract. Those opacities of the lens, caused by penetrating wounds, may be placed in two classes: first, those due to some sharp instrument, which is subsequently withdrawn; and second, those produced by small particles which penetrate the lens and remain within the eye. I have seen examples of the first class produced by a shoemaker's awl, the point of a penknife, a sharp tack, and you will recall the case of the blacksmith who was discharged from the hospital two weeks ago who had a traumatic cataract, produced by the flying point of a horseshoe nail. A fork tine is frequently the penetrating instrument.

Fragments of iron or steel from the head of a hammer or cold-chisel, fragments of gun-cap, grains of powder, etc., not infrequently enter the cornea and penetrate the capsule of the lens, burying themselves deeply in its substance where they may become encapsuled and remain for an indefinite time; or, passing directly through, may find lodgment within the vitreous chamber. The aqueous is admitted to the lens substance and causes partial or complete opacity, and a corresponding impairment of vision. But these accidents introduce other elements of danger which may prove far more serious than the opacity of the lens. If the foreign body passes into the vitreous chamber and rests upon some portion of the uvea, but especially if it is lodged in the ciliary region, sympathetic irritation is liable to occur and may necessitate the excision of the fellow eye. If the foreign body is copper or brass, although they may be sterile at the time of entrance, as would be the case with a fragment of gun-cap, they nevertheless seem to exert, as has been shown by Leber, an especially baneful influence over the eye, probably through the irritating salts which are formed through their chemical decomposition. Then it must always be remembered that the penetrating instrument, or the entering foreign body, may carry into the interior of the eye micro-organisms which may lead to its speedy destruction by suppurative panophthalmitis, or, even a fatal involvement of the fellow eye. If the cataract has been caused by a blow sufficiently severe to have ruptured the lens capsule and the suspensary ligament, it should be born in mind that it is probable that deeper injury has also been produced. Ruptures of the choroid and retina, and retinal detachments, are by no means rare as the result of blows. A blow with the fist, a baseball, or even the small ball of putty blown from a boy's "blow-gun," may cause not only a traumatic cataract, but as I have several times seen, may cause serious injuries at a point in the deeper tunics at the opposite pole of the eye, usually in the region of the posterior pole. This possibility should be kept in mind and will always suggest a guarded prognosis in these patients, with opacity of the lens following blows upon the eye.

Dismissing these considerations, however, thus briefly, I wish to call your especial attention to a danger often present in these cases, but of an entirely different character. If the rent in the capsule is large, the lens may swell so rapidly under the action of the aqueous humor as to cause a transient glaucoma by pressing the iris forward into the angle of the anterior chamber. By this means the spaces of Fontana are closed, the excretion of intra-ocular fluids impeded or prevented, and thus an increase of intra-ocular tension produced. Or it may be that the increase in the volume of the lens is a factor in the increased tension.

The opacity of the lens produced by injury is often only partial. Small particles of various kinds penetrate the cornea, and their weight or their momentum may be sufficient only to bury them superficially in the lens cortex. Here they are surrounded by a small opaque area, which may remain to the more or less serious and permanent impairment of vision. Or the substance may pass through the iris and enter the lens at its periphery, causing a partial opacity, which may encroach but slightly, if at all, upon the area of the pupil. I recall the case of a gentleman who received such an injury from a small piece of the surface of a glazed brick at which he was firing with his rifle. I watched this for several years, the fragment remaining encysted in the periphery of the lens and causing very little impairment of vision. Grains of powder thrown into the eyes by the premature explosion of blasts in mines and quarries, is a very frequent cause of traumatic cataract. The man, upon whom you witnessed the operation of iridectomy at the clinic yesterday, was an illustration of this class of injury. In that case the iridectomy was preliminary to an attempt to extract the opaque lens.

In the treatment of traumatic cataract, one is often at a loss as to the safest procedure to adopt. In cases of transient glaucoma, where the swelling of the lens is the result of a penetrating wound by some sharp instrument which has been withdrawn, the problem is comparatively simple. A section of the cornea can be made, and a portion of the lens removed, with or without an iridectomy, but when the foreign body is imbedded in the lens substance, the dangers are greater. There is always danger of the foreign body escaping from its bed and falling back into the eye upon the ciliary body. This is of course a most serious accident. If the foreign body is causing no trouble, and if the fellow eye is good, it is

usually best to let it alone, since your most successful endeavor cannot restore binocular vision. Other considerations should however guide you in some cases. In one of the group before you the cataract was produced by an injury with a baseball. As you see, he has a white lens which has been partially absorbed. He has been under observation for many months with recurring attacks of ciliary injection and tenderness. These have become less frequent and severe. His occupation leads him into danger from injury because of his one-sided blindness. I have therefore advised him, when his eye is free from the recurring attacks of inflammation, to have the lens removed. While the operation may not secure perfect binocular vision, it will nevertheless give him sufficient vision on the side of the injured eye to avoid approaching teams and other sources of danger.

CLINICAL MEMORANDA.

DUPLEX PERSONALITY.—REPORT OF A CASE.[1]

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DUPLEX personality is a psychical condition which did not, till recently, attract very much attention; but since brain function and brain action have begun to be more deeply and more thoroughly studied, it has been brought forward as a subject worthy the consideration of the profoundest thinkers. Several valuable contributions relating to diseases of personality, as they are called, have recently appeared. The greater portion of the literature comes from the French, but this country is by no means without its students and investigators in this field of science. Dr. Hodgson, of Boston, Secretary of the American Branch of the Society for Psychical Research; Dr. R. Osgood Mason, of New York; Dr. A. E. Osborne, of California; Dr. Irving C. Rosse, of Washington, D. C.; Dr. Weir Mitchell, and others have each reported interesting cases of duplex or of triple personality, or of periodic amnesia.

The Society for Psychical Research and many eminent psychologists are making studious efforts to understand and to explain the strange mental phenomena exhibited in this class of cases, but no one has yet been able to give a clear, comprehensive explanation of them. However, authenticated data, facts regarding cases, etc., are being accumulated and studied, which, in time, will doubtless lead to a scientific elucidation of the psychological forces involved in duplex individuality, temporary extinction of memory of the past, and allied conditions.

What is understood by that remarkable abnormality, known as duplex personality, is that there is a second and distinct consciousness or individuality entirely different from the original or primary one—that there are two more or less complete phases of existence. In this state of abnormal mentality, mental activity is not suspended. The actions of the mind, however, are in the nature of automatic operations; there is a sort of "reflex activity of the cerebrum."

It has been demonstrated that by the means of hypnotism this second personality, with its added powers of perception, may be brought into action and all the incidents which occurred during that period, clearly related.[1] Somnambulism and some dream states might be considered typical examples of another personality—double consciousness—somewhat analogous to the psychic condition existing in this class.

A remarkable "dislocation of memory," to use the term suggested by Sir H. Holland, occurred once with Sir Walter Scott.[2] He dictated, during a prolonged illness, to his amanuensis the whole of the "Legend of Montrose," almost the whole of "Ivanhoe," and the greater portion of the "Bride of Lammermoor," while in a state of "second consciousness." When the works were finished and handed him "he did not recollect one single incident, character, or conversation." The "original incidents" had not been erased from his memory, "but he did not recollect a single character woven by the romancer, nor one of the many scenes and points of humor, nor anything with which he was himself connected, as the writer."

The counterpart of this strange mental condition is sometimes observed in certain delusional insanities; temporary suspension of consciousness may be caused by certain drugs, hysteria, epilepsy, or other diseases, toxic elements in the blood, change in functions of the circulation and of nutrition, traumatic or organic lesions of the brain-substance or of the nerve-cells, etc.

The following case, the history and details of which were kindly given me by an eminent practitioner, Dr. H. G. Leigh, Sr., of Petersburg, Va., came under my observation within the past year:

Mr. K. was fifty years old, of splendid physique, in good health, in fairly comfortable circumstances, and doing a prosperous business. He was sober, moral, and industrious, of affable disposition, popular with a large circle of friends, member of several secret and benevolent orders, happy and content in his domestic relations. He was born and reared in Virginia, had resided and conducted business in ——— for twenty years or more, and deservedly bore the reputation of being a correct, straightforward man in every particular. For years he had been one of the town officials.

One of his near relatives (an uncle, I think) at about the age of fifty, without any apparent reason whatever, went suddenly out West, leaving his wife and children, and was not heard of for many years. Finally he came back on a visit and remained a short time with his family and old acquaintances, but no explanation was given of his strange conduct. It was thought that he had some form of mental disease.

[1] Abstract of a paper presented at the Medico-Legal Congress, held in New York, September 4–6, 1895. From advanced sheets *Medico-Legal Journal* and the *Bulletin of the Congress*.

[1] Refer particularly to case reported by Richard Hodgson in "Proceedings of the Society for Psychical Research," Part XIX, and to Dr. R. Osgood Mason's paper on "Duplex Personality; its Relation to Hypnotism and to Lucidity," *Journal of the American Medical Association*, November, 30, 1895.

[2] In Carpenter's Mental Philosophy, pages 139 and 444, quoted from Lockhart's Life of Scott. Chap. XLIV.

One day, while apparently in perfect health, without any premonitory symptoms of mental derangement, Mr. K. went to a Northern city to purchase goods for his store. While there two days he transacted a great deal of business, met many old friends, and exhibited no indication of aberration of mind. Starting homeward, he registered as a passenger on a certain steamer; feeling very tired, he secured a stateroom, to which he at once repaired, changed his linen, etc. When tickets were collected he was missing. He had *suddenly and mysteriously disappeared*. No one had seen him leave the boat, jump, or fall overboard. An acquaintance, however, said that he was reasonably certain that he saw Mr. K., several hours after the boat had left, in one of the depots in the city. He was sitting down, hat pulled over his face, and seemed to be in a "deep study," so he was not disturbed. Mr. K.'s open valise and all his clothes, except those he wore, were found in his stateroom. The room door was open, but the key had been taken away. Unusual prominence was given the matter in the public press, and various explanations were suggested during the vain search that followed, until finally investigation was abandoned, the theory that he was dead accepted, and the Court appointed an administrator of his estate, and a guardian for his children. His business was purchased by his son, and everything was moving along smoothly when, *six months after* he was last heard of, he suddenly and unexpectedly appeared at the home of a relative in a distant Southern city. He was brought home in a composed, but partially dazed condition, able to recognize but few of his friends. He was an entirely changed man; the physical and psychical metamorphoses were quite complete. He had reduced in weight from 250 to 150 pounds, and was very feeble. He wore the same suit of clothes he had on at the time he disappeared, and had in his pocket the check and key which were given him on the boat.

He was at once put under treatment, and within four weeks recovered his previous bodily and mental health, and has since conducted his old business with his accustomed skill and industry. A day or two after his return home an abscess, deep down in the auditory canal, broke and discharged a large quantity of sanguino-purulent matter. *Immediately thereupon improvement began*, and went on rapidly. This was a remarkable fact, and is, I think, worthy of special note.

Hear Mr. K.'s own account of his strange case: "I was feeling very tired, thoroughly fatigued, after a very busy day in the city, so went to my stateroom immediately upon going aboard the boat, and changed my clothes. Up to that time I was thoroughly conscious, but *after that I recall nothing, all was oblivion till six months later*, when I came suddenly to myself in a distant city in the South, where I knew no one. I found myself driving a fruit wagon on the street. I was utterly astounded. Why I was there, how I got there, when I came, what I had been doing, were puzzling questions to me. Upon inquiry, I learned that I had been there and at work for some time. My life, since I was in that stateroom, six months previously, had been an absolute blank to me. I can give no account of myself during that period of time. *I recall nothing*.

"I started at once for Virginia, but on the way I again lost consciousness, though for only a day or two. When further on the way home I felt so utterly worn out, I stopped in a certain town and went to the house of a near relative. From there I was taken home. I was in a half-dazed, confused condition, and remained so some days longer. I am now feeling well and all right."

He could not tell where he had lived in that Southern city, or the name of any person he had known there. He was, indeed, a stranger in a strange land. Nothing definite has been ascertained regarding his life during his *second consciousness*.

This case bears many striking resemblances to others that have been from time to time reported, but there are two points of special interest. First, the *inherited tendency* to *eccentricity*, if not to *insanity*. Second, *the abscess in the ear*, the breaking of which was followed by a rapid return to normal mentality.

[Nearly a year has elapsed since recovery and no relapse has occurred; on the contrary, Mr. K. has enjoyed excellent health, mentally and physically, and is now doing a good mercantile business at his old stand.]

REFERENCES.

Among the recently published articles bearing upon the subject of this very incomplete paper, I have read with special interest and profit the following:

"A Case of Epilepsy and Double Consciousness." By G. R. Trowbridge, M.D., Danville, Penn., MEDICAL NEWS, February 21, 1891.

"A Case of Double Consciousness." By Richard Hodgson, LL.D., Boston, Mass., Proceedings Soc. for Psych. Research, July, 1891.

"Triple Personality." By Irving C. Rosse, M.D., Washington, D. C., *Journal of Nervous and Ment. Dis.*, March, 1892.

"People Who Drop out of Sight." By A. E. Osborne, M.D., Glen Ellen, Cal., *Medico-Legal Journal*, June, 1894.

"Duplex Personality. Its Relation to Hypnotism and to Lucidity." (Read at meeting of Am. Med. Association, May, 1895.) By R. Osgood Mason, M.D., New York, *Jour. of Am. Med. Association*, November 30, 1895.

"Dual Personality," etc. By Lewis C. Bruce, M.D., *Brain*, recent number.

RECTAL GONORRHŒA AND GONORRHŒAL ENDOMETRITIS.

BY JOHN J. ORTON, M.D.,
OF RANDOLPH, O.

WHEN I read Dr. Murray's article on "Gonorrhœa of the Rectum" in THE NEWS of March 7th, it occurred to me that a report of a similar case, which has recently been under my care, might be of interest to the profession.

On November 12, 1895, I was called to visit Mrs. ——, aged forty, mother of two children, the youngest of which is fourteen years of age. Her previous health

had been quite good, except that she suffered at times with indigestion. For several days previous to my visit she had been suffering with the usual symptoms of acute vulvitis, for which her husband had consulted me at my office and obtained medicine. He also told me that she had a swelling of one of the labia. Examination revealed a fully developed vulvo-vaginal abcess, vulvitis, and urethritis. Vaginitis was also suspected but, as the parts were so sensitive on account of the abcess, no attempt was made to pass the speculum. I opened the abscess, evacuated the pus, and ordered the treatment continued that I had prescribed when consulted at the office, which consisted of lead and opium lotions for the vulvitis, hot poultices to the abscess, and vaginal injections of warm water containing a solution of lead acetate. A day or two later I was able to pass the speculum and found, as I expected, a vaginitis. The appearance of the os uteri looked as though the woman had been suffering with a chronic erosion of the cervix before her attack of the gonorrhœa.

There was no question as to diagnosis, as the husband admitted that he was having an attack of gonorrhœa.

The usual remedies were used with good success in curing the vulvitis, urethritis, and vaginitis, but other complications developed which taxed my skill. In spite of the best treatment with which I was familiar, either by experience or reading, cervical endometritis developed, which gradually crept onward until it invaded the uterine cavity, and I had to deal with a corporal endometritis of gonorrhœal origin. The patient had complained of pain and an uneasy feeling in the rectum, which I supposed was caused by internal hemorrhoids. One morning while using Sims' speculum, during the treatment of the vaginal and uterine trouble, I was amazed to see about a teaspoonful of muco-pus ooze out of the anus when I depressed the perineum with the speculum. It immediately dawned upon my mind that my patient was suffering with gonorrhœa of the rectum in addition to that of her genital organs. In fact, everything possible was infected except the tubes and the bladder and the parts beyond them. Unless vigorous treatment was used it would probably be only a matter of time until pus-tubes would be added to the already serious condition of my patient. She was then suffering severely with uterine cramps, and bimanual palpation showed the uterus to be sensitive and tender.

On January 14, 1896, Dr. C. S. Hiddleson administered chloroform, and while she was under the anesthetic I first cleansed the vagina and vulva with an antiseptic solution and irrigated the uterine cavity with H_2O_2, one part to boiled water, three parts to wash away the purulent discharge. I then thoroughly curetted the uterine cavity and cervical canal with a sharp curette, irrigated again with plain boiled water, applied equal parts of pure carbolic acid and tincture of iodin to the endometrium and cervical canal, and finished by packing the uterus and vagina lightly with iodoform gauze. The patient rapidly improved from that time on, but some cervical catarrh remained which eventually responded to treatment.

The rectal trouble was treated first with injections three or four times a day of H_2O_2, one part to water, three parts containing sulpho-carbolate of zinc, five grains to the ounce. This seemed to do good until, on December 29th, she was seized with a constant desire to go to stool and passed blood, mucus and shreds of mucous membrane. I then changed the rectal treatment to injections of creolin one-half to three-fourths teaspoonful to a pint and a half of warm water every six to eight hours, alternating with fl. ext. hamamelis, four to six drams to water, a pint and a half. This proved efficient and the rectal difficulty gradually subsided. The injections were reduced in frequency as improvement progressed, and finally omitted, but, as she had a slight return of the trouble, they were again resumed with good results.

Like Dr. Murray, I found no help from text-books in treating the rectal complication. Rectal gonorrhœa is not mentioned in any text-book I have consulted, and Dr. Murray's article is the first I have ever seen on that subject.

To explain how the rectum became infected in my patient is difficult. My theory is that the discharge from the vagina running down over the anus was the cause, or else a little of this discharge was introduced into the rectum by using an enema to move the bowels, although a different nozzle was employed for this.

MEDICAL PROGRESS.

The Action of Erysipelas on Syphilis.—According to the *British Medical Journal* for February 29th, RUDOLPH, in *Centralbl. f. inn. Med.*, February 1, 1896, relates two cases with syphilitic manifestations in which an accidental erysipelas occurred. A man, aged fifty-two, had two syphilitic ulcers on the face. The erysipelas affected both sides of the face. Five days after the defervescence, and nine days after the onset of the erysipelas, the ulcers were healed.

A woman, aged twenty-five, contracted syphilis five years previously. She now had severe headaches, and paresis of the left side of the face, with occasional clonic spasm. In addition there were enlarged submaxillary glands, and a chronic arthritis affecting both knees. Syphilitic cachexia was marked. She had been through several courses of antisyphilitic treatment, including mercurial injections and inunction. After an attack of erysipelas the patient was cured of her chronic syphilis. The glands went down, the pains in the head and joints disappeared, and the facial paralysis gradually recovered. For a year she remained free of any syphilitic manifestations, when a gumma appeared in the leg. The patient would not submit to further antisyphilitic treatment. The rapid and beneficial effect brought about by the erysipelas in these cases was striking. Unfortunately the first case was not seen again, and so it could not be stated whether he remained free of relapse. In the second case the cure was not permanent, but the erysipelas had more effect on the disease than the antisyphilitic treatment.

Practical Value of Roentgen Photography (Skiagraphy).—As an illustration of the diagnostic possibilities of the Rontgen light in surgical practice, Professor König, of

Berlin, at a recent meeting of the Berlin Medical Society (*Deutsche medicinische Wochenschrift*, 1896, No. 8, p. 113), related the case of a woman, forty-six years old, who several years previously suffered from a painful swelling of both knee-joints, which moderated upon the right side and soon disappeared upon the left. The tibial portion of the right knee-joint, however, in a short time began to swell: the joint became mobile in a lateral direction, and walking was rendered impossible. On examination the right leg was found greatly atrophied, and the knee-joint empty. The tibial portion of the joint, however, was enlarged and in circular form. The diagnosis between inflammatory disease of the tibia and a neoplasm was decided in favor of the latter from the presence of pulsation in the softened anterior portion of the tibia. Ablation of the femur was decided upon and effected. Attempts had been made to utilize the Rontgen light, but were successful only after the operation had been performed. Examination of the specimen showed the joint to contain no fluid, but presenting evidences of the existence of a previous sero-fibrinous inflammation. Sagittal section of the tibia disclosed the presence of a spindle-cell sarcoma, involving the epiphysis and the upper part of the shaft. A shadow-picture, prepared from the lateral aspect of the joint, showed the inner condyle of the femur, the inter-articular fibro-cartilage, and the upper margin of the tibia. Below the last could be seen the shadow of a peculiarly lobulated tumor of lighter shade than the surrounding bone. The lower boundary of the tumor gradually merged into the shaft of the tibia. The condyles of the femur appeared on superficial examination of normal configuration, but a skiagraph from the lateral aspect disclosed the presence, in the epicondyle, of a small body of dark contour, which upon subsequent section of the bone proved to be an enchondroma of the spongy portion of the epiphysis.

In the same journal containing the report of Konig, a case is detailed by Hammer (*Ibid.*, p. 114) in which a soldier believed that he had accidentally introduced a needle into his hand, but beyond a punctured wound no trace of the foreign body, in whole or in part, could be detected. Upon exposure of the member, however, to the Rontgen light a fragment of the needle was readily demonstrated at some distance from the wound of entrance, and was subsequently excised with especial facility.

Prognostic Significance of Albuminuric Retinitis.—E. Oliver Belt, M.D., Washington, D. C. (*Journal of Am. Med. Ass'n.*, November 2, 1895). The writer collected the records of 419 cases of albuminuric retinitis from ophthalmologists throughout the country: "The time allowed was too short for many to look over their records, and many had not kept trace of the patients after referring them back to the family physician, but enough cases were reported to show that the duration of life is longer among private patients, and that renal affection is immediately influenced by hygienic surroundings. However, the number of cases surviving two years was disappointingly low, and the consensus of opinion seems to be that nearly all prove fatal in less than two years.

"From all the statistics I have been able to find we get the following results: Cases in private practice, 155; of these 62 per cent. died within one year, 85 per cent. within two years, and 14 per cent. lived more than two years.

"Hospital cases, 77; of these 85 per cent. died within one year, 93 per cent. within two years, and 6 per cent. lived more than two years.

"Mixed cases, 187; of these 65 per cent. died within one year, 93 per cent. within two years, and 6 per cent. lived more than two years.

"Total number of cases, 419: of these 72 per cent. died within one year, 90 per cent. within two years, and 9 per cent. lived more than two years."

THERAPEUTIC NOTES.

Argonin is described as a combination of silver and casein, existing as a white powder, which Lewin (*Berliner klinische Wochenschrift*, 1896, No. 7, p. 146) has employed in the treatment of acute gonorrhœa, using a solution of 3 parts to 200 of water, and making an injection of 2½ fluid drams five times daily. The results were entirely satisfactory, the medicament exerting a destructive influence upon the gonococci and being free from irritating properties, although it was wanting in astringent qualities and thus was unable to control existing inflammation of the urethral mucous membrane.

The Treatment of Typhoid Fever with Antitoxic Serum.—Borger (*Deutsche medicinische Wochenschrift*, 1896, No. 9, p. 132) has employed antitoxic serum obtained from the calf in the treatment of twelve cases of typhoid fever, with results that for the present must be considered uncertain. In four cases it is thought that the serum may have exerted a favorable influence, but the most that can be said with certainty is that the injection of large doses of the serum is unattended with evil results, and that a favorable effect upon uncomplicated mild cases of typhoid fever treated early may be anticipated.

For Epilepsy.—

Take of

Codein	℥ j
Potassium bromid	℥ ij
Infusion of adonis vernalis	℥ iv

Mix. Dose: From half a teaspoonful to a teaspoonful thrice daily.—*Gaz. hebd. de Méd. et de Chir.*, 1896, No. 17.

For Burns.—

Take of

Aristol	From a dram to two drams

Dissolve in

Olive oil	Half a fluid ounce

Add

Vaseljn Lanolin } aa	Two drams.

Mix. Apply topically.

—*Gaz. hebd. de Méd. et de Chir.*, 1896, No. 17.

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THE PERSONAL ADVANTAGE IN HIGHER EDUCATION.

Allusion has already been made in these columns to the recent decision of the Faculty of the Harvard Medical School to require candidates for admission after 1901 to present a degree in arts, science, or medicine. Great as is the importance of this step, we can but think that it is somewhat overestimated, in one particular, by our esteemed contemporary the Boston *Medical and Surgical Journal*, which says in a recent issue: "Parents will not be slow to recognize the great prestige that the degree of such a school will give their sons in the outset of their professional career, and many positions will be open to men with this higher Harvard degree to which the graduates of other schools with a lower standard could not aspire."

There is no degree which gives a great prestige to its possessor in the outset of his professional career. The average physician is dependent on the public for his livelihood, and the public cares but little about the school from which he comes while it cares a great deal about the man himself. In general, the physician's success will be in direct proportion to the thoroughness and completeness of his training, but so much depends on the man that one will gain more with small opportunities than will another with great.

Let it be understood that we are far from decrying the step which the Harvard Medical School has taken, or its influence on the profession in general; other schools will follow, and the progress of the leaders will draw in its wake the smaller colleges, and so advance will be made all along the line. Schools increase rather than decrease the number of their students when they advance their requirements and their advantages. The medical schools of New York furnish a marked illustration of this. The more rigorous the course has been made the greater has been the number of students. But we must not be unjust to the smaller schools. Many of them are doing excellent work, work of the most progressive character, and so many factors must be counted upon in determining the prestige with which a young graduate starts in his career that we may not be surprised to find, as we frequently do, that the leader in the race is reflecting honor on a comparatively obscure alma mater.

MEDICAL ARTICLES IN LAY MAGAZINES.

Harper's Magazine for February, 1896, contains a contribution by Dr. Forbes Winslow on "Premonitions of Insanity."

The bad taste or judgment exhibited by the editor or publisher in soliciting or publishing such an article for presentation to the general reader does not concern us, nor will we waste time debating the ethical aspect of the question, as in these days ethics seem thrown to the winds; but the article referred to has a world of mischief in it. In a medical publication it would seem puerile; in a lay periodical it is outrageously harmful.

According to the author, using his own words, "drowsiness," "disturbed sleep," "troublous dreams," "insomnia," "giddiness," "defective memory," "want of energy," "neglect of work," "great difficulty in concentrating thoughts and ideas," or, in "turning or fixing the mind on any one subject," "wandering of mind," "restlessness," "peevishness," "capriciousness," "irritability," "seeking seclusion," "dilated, unequal,

or contracted pupils," etc., etc., are among the *premonitions* of insanity, and nowhere is it said that they, one or all, may be also symptoms of different and, very likely, easily curable affections.

The danger of thus parading before general readers, many of whom are receptive and impressionable, and some of whom are already morbid and introspective, a lot of symptoms which are possibly due to an indigestion, an anemia or a plethora, a lithemia or an old iritis, as premonitions of insanity, should be obvious to all. The harm such injudicious and misplaced information may do is incalculable. How many will it temporarily rob of peace of mind? How many will it make permanently unhappy and apprehensive? How many will, because of it, brood over some simple ailment until their morbid fears become delusions, their hypochondriasis melancholia? Who, knowing the tendencies of our neurotic age, dare say that scores of cases of mental alienation will not trace their aggravation, nay, very inception, to this piece of impudent folly?

The influence for harm in this article is magnified because its author poses as an expert alienist, and testified as such in a recent homicide trial in this city. Medical experts are in sufficiently bad odor already; but what shall we think of one who publishes broadcast to the world such a statement as this: "There are so many varieties, and so much light and shade to be observed in madness that only an experienced authority can detect the insidious but sure approach of that malady which deprives one of nature's light and reason and reduces him to the level of the beast which perisheth." Thus, after instructing us how to diagnose and perhaps make ourselves insane, he says only an authority can surely detect the truth—and he is an authority!

VENEREAL DISEASES AND SYPHILOLOGY.

NEW THERAPEUTIC METHODS IN SYPHILIS.

Like the hunt for the philosopher's stone and the method of making artificial diamonds, the search for an ideal treatment of syphilis goes merrily on. One reads with amazement the chimerical and even dangerous methods which are gravely advocated for the treatment of this infection, and one marvels at the audacity of some of the claims made for their curative effects. One of the latest fads is to inject solutions of bichloride of mercury directly into the veins, with the idea of producing a certain and rapid result. The vogue of this seemingly dangerous procedure had its origin in certain good results obtained by Bacelli by the intravenous injection of quinin in malaria. This author and Pyle have already written of the benefits to be derived in syphilis by throwing the sublimate solution directly into the veins. Görl gravely informs us (*München. med. Wochenschr.*, No. 20, 1895) that he injects an aqueous solution of bichloride, of strength of 1 to 3 per cent., into veins rendered very visible by ligation or pressure farther up the limb. Before the injection is thrown in, a few drops of blood should be allowed to escape through the hypodermic needle, in order to give the operator confidence. It is said that this little operation is painless and free from danger; that a small dose of the drug only is required, and that the resulting cure is rapidly effected. In some cases the veins are so hidden or so little developed that they do not lend themselves to the treatment, which should be reserved for cases in which a rapidly produced effect is necessary. Bruni (*Il Policlinico*, May 11, 1895) details the case of a young man syphilitic for four years, who suffered from Jacksonian epilepsy, which was not relieved by injections of gray oil and the internal use of iodide of potassium. Three milligrams of sublimate in watery solution were thrown into the left median cephalic vein, and the next day six milligrams were similarly injected. After these two injections the epileptic attacks and the headache ceased, and as a result of the use of sixteen injections the patient was pronounced cured.

Dinkler (*Berl. klin. Wochenschr.*, pp. 382, 410, and 437, 1895) treated nine patients by this method, and he considers it more effective than the usual modes of administering mercury. This author thinks with Bacelli that by intravenous injection the mercurial is brought into immediate contact and acts directly upon the vascular walls, which are so constantly affected by syphilis. This point, in my opinion, is worthy of further thought and study.

Dinkler's results were strikingly good, but he is evidently alive to some of the shortcomings of

this treatment. He also emphasizes the fact that some people have inaccessible veins. In addition to this objection he also mentions thrombosis and embolism. Dinkler thinks with Blaschko that relapses are more to be feared when the intravenous treatment is used than when mercurial inunctions are made, for the reason that the mercurial salt is so rapidly eliminated from the system. Dinkler concludes that, although the treatment is rational, it will never displace the older methods; that it may be employed in cases of lesions having a rapidly destructive course, in many emergencies, and as preliminary to general anti-syphilitic treatment. He thinks that it will prove valuable in some grave cases of cerebral syphilis, and that in desperate cases it may be used in a limited manner simultaneously with mercurial frictions.

Stoukovenkoff (*Meditzin. Obozrenié*, No. 18, 1895) has used intravenous injections of sublimate and benzoate of mercury in thirty cases of early syphilis, and has seen rapid results follow therefrom. He found that the mercurial was excreted by the kidneys and the sudoriparous glands, and that the quantity thus eliminated was in direct proportion to the amount injected. He found that the quantity of mercury necessary to produce a therapeutic effect was as large as when the drug is administered hypodermically. In this view he is not in accord with Bacelli. Stoukovenkoff speaks very significantly of such complications as phlebitis of one or two months' duration, of abscesses and thrombosis, but thinks that with an improved technique these drawbacks will disappear. In contrast with the foregoing putative good results it may be interesting to know that Hogner (*Boston Med. and Surg. Journal*, June 27, 1895) used intravenous injections of sublimate in a severe case of syphilis and experienced neither bad effects nor any therapeutical result whatever.

It may be well to remember that Ullmann very promptly caused death in the lower animals when, in a series of experiments, he injected the bichloride into their veins.

Acting on the assumption that syphilis is a bacterial disease, and that its virus animatum and its poisons may be neutralized or destroyed by the serum of animals which are known to be immune to the infection, or by the serum of syphilized individuals, an antitoxin-serum treatment has sprung into vogue. The basis of this treatment is well expressed in Klein's statement which reads: "When an animal has passed through one attack of a given infectious disease—that is, when an animal has served as a host for the growth and multiplication of a particular pathogenic bacterium—it is found that its blood has acquired a peculiar faculty. The blood has become capable not only of inhibiting the further growth of the bacterium, but also of neutralizing the toxins produced by the bacterium. Animals, therefore, which have acquired immunity possess in their blood a something that they had not before, and this substance belongs to a group of substances called antitoxins." The net results of the injection of the serum of animals as practiced by Tommasoli, Sartori, and Kollman have no scientific value whatever, and the procedure seems to have been abandoned. On the other hand, the method practiced by Bonaduce, Pellizzari, Fournier, and Feulard, who used the serum of a patient suffering from hereditary and acquired syphilis, is being much tried.

Cotterell (*British Jour. of Dermatology*, November, 1895) has treated eighteen cases by the use of hypodermic injections of serum of syphilitic individuals. He found that the serum of persons affected with secondary syphilis was more active than that of those in the tertiary stage. The gross results obtained were rapidity and efficiency of action and the improvement of the patient's health. This author, however, admits that the number of cases was too small and the time of observation too short to warrant him in drawing definite conclusions.

Vievorovsky (*Medical Week*, October 4, 1895) treated five patients suffering from secondary syphilis, by hypodermic injections of the blood-serum of robust subjects having tertiary gummata. The number of injections in each case was from 21 to 23. It is said that chancres were promptly healed; that early rashes and mucous lesions disappeared, but that relapses occurred in spite of the treatment. It is further to be noted that the relapses were much more refractory to the injections than the early rashes were, and that mucous patches were particularly rebellious to this method.

One is scarcely prepared to think that this syphilitic serum-injection treatment would be used as a prophylactic against syphilis, yet Rochon comes cheerily forward and gives his experience in this direction. This author (*Médicine moderne*, May 22, 1895) reports the case of a man who had coitus with a woman who had active syphilitic lesions on the labia majora and minora. Three days after this assumed infecting intercourse hypodermic injections of serum from the blood of syphilitics was begun. In the first three injections the serum was derived from a person who had contracted the disease nine years previously; then followed three injections derived from the blood of a person syphilitic five years, and two from a person in the eighteenth month of the infection. Rochon rather hesitatingly ventures the opinion that perhaps this vaccination did have a prophylactic effect. The man experimented upon is said to have escaped unscathed.

It is well to remember that no scientific value can be placed upon the facts presented by a few haphazard cases observed for only a short time. The tendency of very many who try new remedies and new methods of treatment in syphilis and in other morbid conditions is to rush heedlessly into print with reports of cases which should be observed for years, instead of months. In syphilis the mere dissipation of certain rashes or the disappearance of certain symptoms in reality amounts to very little in estimating therapeutic effects. To judge correctly of the efficacy of a drug or a mode of treatment we need records of at least fifty treated cases carefully watched during no less a period of time than three or four years.

ROBERT W. TAYLOR, M.D.

ECHOES AND NEWS.

IT is very fitting that Sir Joseph Lister should act as chairman of the British section of the international memorial to Pasteur.

DR. GEORGE H. ROHÉ, secretary and treasurer of the Rush Monument Committee, reported on March 31, 1896, $3729.39 as his total receipts to that date.

DURING the excitement of a recent fire that destroyed a large hospital at Lille, several patients died of shock before they could be removed. But the fatality did not cease at this, for ten sappers, who were removing medicines from the drug department, indulged in drinking what they took to be liquor, in consequence of which four died in spite of prompt attention.

GOVERNOR MORTON has signed the bill making appropriation of seventy-five thousand dollars for the Craig Colony of Epileptics.

THE New York Health Board has instructed Dr. Charles S. Benedict, Chief of the Bureau of Contagious Diseases, to find out where the milk comes from which every child who is taken with a contagious disease has been drinking.

FOOTBALL accidents in England are strongly in evidence during the last two weeks of March. Three players suffered fractures of the larger bones, while a fourth received a probably fatal injury to his neck, followed immediately by paralysis.

IN the current number of the *British Medical Journal* a case of severe opium poisoning, treated with strychnia and permanganate of potassium, is reported by B. W. Gowring, M.R.C.S. His success seems to have been properly accorded to the potash.

THE bill to repeal all quarantine acts in the United Kingdom was introduced by Mr. Russell, member of Parliament, on March 23, 1896.

IN Cleveland, Tenn., two leading physicians died of blood poisoning within a week. It is not stated just how they became infected, but it is presumed that it occurred during their professional work.

BELLEVUE HOSPITAL MEDICAL COLLEGE graduated a class of ninety-seven last month. The successful candidates for appointment in the Bellevue Hospital were: 1. Raleigh William Baird, Texas; 2. Allie Walter Williams, Georgia; 3. William A. Chisholm, Nova Scotia; 4. Charles Blount Slade, Georgia.

MUCH relief will be afforded the most densely crowded tenement district of New York City by the establishment of the proposed parks. Some conception of the overcrowding in these regions can be formed when it is stated that one block contains 1650 inhabitants.

THE bill before the Legislature at Albany to establish for pay-patients a diphtheria and scarlet fever hospital, near East River in New York City, passed the Senate on April 2d.

DR. PENDERGAST, health officer of Cincinnati, states that his investigation has shown that the pipe used for beer pumping in saloons generates a dangerous poison.

CONTRARY to what was announced in the early experience with the X-ray, two Paris experimentors have succeeded in obtaining the skiagraph of a letter through the envelope enclosing it.

AN English photographer who sent out a picture of a foot showing an imbedded needle, received a telegram

from a customer saying: "Photograms received, very tame. Send more sensational ones, such as interior of belly, backbone, brains, liver, kidneys, heart, lungs, etc."

A NEW ambulance for Bellevue Hospital was put into use yesterday. It is known as No. 6, and is said to be the finest ambulance ever constructed in this country. It stands about a foot higher than any of the other ambulances, and weighs only 1300 pounds. The wheels of the vehicle are equipped with solid rubber tires two inches thick.

A BROKEN needle embedded in the fleshy part of a woman's hand was drawn out by a powerful electro-magnet, improvised at the electric light works in Cherryfield, Me., the other day.

A CREMATORY is being erected at Liverpool, making the third in England. The others are at Manchester and at Woking; there is also one at Glasgow. Woking had 150 cremations in 1895, making its total number 733.

UNDER a recent order of the Postmaster-General, relating to periodicals, back numbers and reprints of newspapers, magazines, and all other periodicals, cannot be mailed as periodicals, but must pay postage as books. The publishers say that this order will cause much inconvenience.

IN the French departments, where forests have been cut down, there has been a marked decrease in the number of births, and an increase in that of deaths during thirty years. In the last five years the excess of deaths over births was 89,682, and the mortality in the departments was nine times as great as in the rest of France.

THE medical officers of New York State militia are dissatisfied with the present insignia, which is a shield of embroidered gold. This, it is claimed, is a designation entirely out of place for the Medical Department and practically represents nothing. The insignia that is desired is the Geneva cross, which is known throughout the world, and at once makes known the presence of the medical officer. Surgeon-general Terry has the matter under advisement.

REMARKABLE courage was displayed by Mary Farrel, the laundress whose arm was amputated at Bellevue Hospital Sunday. The young woman while at work in a hotel laundry had her left hand caught in a large steam wringer. The hand and wrist were terribly crushed. The doctors decided on an immediate amputation below the elbow joint. The patient positively declined any anesthetic, and the operation was done without it, the patient proving an interested spectator of the procedure.

A MAN giving his name as Santanelli arrived in Fort Wayne, Ind., recently and gave some private exhibitions of hypnotism. On Monday night, March 30th, he placed James Mahoney, a youth, under hypnotic influence. Since that time Mahoney has been in a comatose state, closely watched day and night by a committee of medical students. This action of Santanelli has caused indignation among the physicians who assert Mahoney will suffer serious injury as a result. Santanelli has been arrested on the charge of cruelty to a minor. This is the first case of this kind ever tried in court.

A SOCIETY has been organized in New York, under the name of the Improved Housing Council, for the purpose of providing suitable dwellings for the tenement-house population. Specifications have been given and the architects of the city invited to submit plans for a suitable type of building adapted to the conditions which prevail in New York. The plan embraces a group of houses, six stories high, designed for an entire city block, and realizes the most recent and approved ideas for light, air, privacy, safety, and comfort.

HENRY J. JORDAN, thirty-nine years old, of 78 West Eighty-fifth street, has been indicted by the grand jury for practising medicine without a license at 21 West Nineteenth street. It is alleged that he has been practising under a diploma of the Philadelphia Medical College that was held by Henry J. Jordan, now dead. The diploma was granted in 1867, which date, it is alleged, has been altered to 1879. The County Medical Society has charge of the prosecution.

THE following is quoted from the recent Goulstonian lectures on "The Life History of the Malaria Germ Outside the Human Body," by Dr. Manson of England: "If it is established, as I believe that ere long it will be, that the plasmodium is a parasite of the mosquito, that malaria is a disease of insects, we may look for some strange scientific and practical developments. The discovery will spread before us a vast field for future study. The real science of malaria will only be begun."

A CASE of death from the use of antitoxin is reported from Wheelersburg, O. On the 22d of March a practitioner, who has had considerable experience in the use of serum, injected the usual prophylactic dose over the scapula of a sleeping child of five years. An hour before he was known to be in perfect health. In less than five minutes the doctor was summoned from an adjoining room to find the child dead.

THE town council of Alameda, Cal., has taken the initiative in advanced ideas of caring for tuberculous patients. An ordinance requires that all persons ill with consumption shall be reported by their physicians to the Board of Health, when directions will be given for their isolation and proper care. Another evidence of the growing appreciation of the contagiousness of phthisis is shown by the steps recently taken in Chicago for the erection of separate buildings in connection with the county hospitals of Chicago for the use of consumptives. Such a hospital has just been opened in Ireland.

WHAT appears to have been the final hearing of Judiciary Committee of the Massachusetts Legislature upon the antivivisection bill was had last week. Witnesses and certificates from nearly all those teaching physiology in the State were arrayed in opposition to the measure.

President Eliot, of Harvard College, strongly protested, declaring that there was no abuse of vivisection in Massachusetts.

A number of the prominent physicians of Chicago have recently allowed themselves to be interviewed by a representative of the daily press concerning their views upon cremation as compared with ordinary burial of the dead. For sanitary reasons they were unanimously in favor of fire, and expressions of strong opposition on any grounds were wanting. The writer develops the fact that a greater number of acres within the limits of Chicago were devoted to cemeteries than to parks.

The hypodermatic use of perfume is said to be a popular fad among the Parisian votaries of fashion. The injection of a small amount of violet extract imparts quite a lasting and delicate fragrance to the skin, obviating the inelegance of such applications to the linen.

Considerable interest is being manifested in measures now pending in Congress relative to the hospital corps of the army and the marine hospital service of the navy. The objects aimed at by the bills are to change the official title of apothecary in the navy to pharmacist, to raise his rank to that of a warrant officer and to increase his pay. In the army the bills provide for a change of title from hospital steward to pharmacist, to promote the rank from that of first sergeant to sergeant-major and to increase the pay from $45 to $75 a month.

The following is a list of the medical societies and associations that hold meetings between the 10th and 30th of the present month: Medical Association State of Alabama, at Montgomery, April 21–24th; Arkansas Medical Society, Fort Smith, April 29th; Medical Society State of California, Los Angeles, April 21st; Medical Association of Georgia, Augusta, April 15th; Iowa State Medical Society, Des Moines, April 15th; Medical and Chirurgical Faculty of Maryland, Baltimore, April 28th; Mississippi State Medical Association, Vicksburg, April 15th; South Carolina Medical Association, Spartanburgh, April 22d; Tennessee State Medical Society, Chattanooga, April 14th; Texas State Medical Association, Fort Worth, April 28th.

A well-dressed young man, who represented himself as a health inspector, called at a bakery at 783 Third avenue, Brooklyn, on Monday evening and induced the young woman, who was in charge, to accompany him to the sidewalk on the pretense of looking at some defect in the gutter. Simultaneously, another young man, the confederate of the "inspector," entered the store and rifled the money-drawer, containing $10.

Anti-vaccinationists in this country may well ponder on the experience through which the citizens of Gloucester, England, are now going. For years that city has been a centre of the anti-vaccination craze, and so prevalent there was this particular form of idiocy, that the law in regard to the employment of this safest and most certain of all the prophylactics known to medical science, has long been a dead letter. A whole generation of helpless children was allowed to grow up unguarded, and every school became simply an invitation to pestilence. Now the invitation has been accepted, and such an epidemic of smallpox is raging at Gloucester as has been rarely equaled in modern times, except among the savage tribes of Africa or Greenland. The hospitals are crowded to overflowing, business is at a complete standstill, churches and schools are closed, and toward the cemeteries moves an almost continuous procession of wagons laden with the dead.

Dr. Roger S. Tracey, register of vital statistics, reports that for the week ended at noon, April 4th, there were 922 deaths in New York City, of which 352 were in cases of children under five years of age.

Some very observant person has discovered a new affection of the eyes, caused, it is said, by the prevailing method of seating passengers in street cars. The effort to fix the gaze upon passing objects results in a strain and twitching in the external muscles of the globes, which is quite annoying.

CORRESPONDENCE.

ACUTE POISONING FROM COTTON-ROOT BARK.

Editor of The Medical News:

Dear Sir: The following case may be worth reporting as I am unable to find anything similar to it: Was called very hastily about 11.20 P.M. one Saturday in June, 1895, by Mr. R., a merchant, who stated that he had found his wife unconscious when he arrived at home from the store a few minutes before.

I soon reached the patient and found her in a state of complete muscular relaxation. The pupils were alike both widely dilated; respiration 10, sighing and shallow; pulse 150, very weak and compressible; temperature 95° in axilla.

There was a faint, peculiar odor to the breath, but no blisters on the lips or tongue, though the latter was very dark colored. I asked the husband if she was pregnant. He replied that she thought she was, but he did not. He assured me, however, "that she had not taken anything for that, because he knew she wouldn't do such a thing."

Gave apomorphia, ¼ gr., hypodermically, and diluted alcohol by the same method. Thorough emesis occurred in five minutes, the vomited matter being reddish-brown in color. The symptoms showed rapid improvement, and in half an hour she could swallow, when the stomach was thoroughly washed out, getting rid of some more reddish-brown material, which appeared like extract of cotton-root bark. In about two hours she was able to talk and stated that she took four ounces of fl. ext. cotton-root bark during the interval from 9 to 10 P.M.

She improved rapidly and the next morning was able to sit up. No further trouble occurred except that she was quite weak for a few days.

The amusing thing about it all is that she was not pregnant.

Geo. A. Blakeley, M.D.
Albany, Wis.

SOCIETY PROCEEDINGS.

THE LOUISVILLE CLINICAL SOCIETY.

Meeting, February 26, 1895.

Dr. Louis Frank presented pathological specimens with the following description: The first specimens which I present for your inspection are two ovaries, which are the seat of primary carcinoma, as shown by microscopical examination. The history of the case briefly is as follows: The patient was a woman, forty-nine years of age, who was first seen about Christmas last for some pain in the abdomen which was diagnosed floating kidney. She was under treatment for a while, later passing out of the hands of that physician. A few days before I saw her she was seen by Dr. Carl Weidner, who diagnosed some uterine or ovarian trouble.

I made a diagnosis of papilloma of one ovary. The entire pelvis was filled with a mass, the uterus being pushed anteriorly and downward against the pubic bone. It was very small in size. There was ascites, and the woman was markedly anemic, having lost in the previous six months forty pounds in weight. The case was deemed of a malignant character, and she was advised to have an operation performed, to which she consented, being operated upon one week afterward at the St. Joseph Infirmary, when these two specimens were removed. When first removed they were about twice the size they now present, there being a number of cysts throughout each specimen. The cyst enveloping one ovary has not been opened, but it contains a gelatinous or colloid material. Connected with this ovary there was a very large cyst, which extended high up in the abdomen, almost to the umbilicus. The soft wall of the larger cyst was ruptured in attempting to remove it. There were no adhesions whatsoever. At the time of the operation it was discovered that metastases had occurred, although none of the cysts had then ruptured. Several of the mesenteric glands were involved, and there were one or two spots on the intestines themselves. Before the operation we had thought there were no metastases, and for that reason had advised the operation; in fact, we did not think that it was a case of carcinoma previous to the operation, as the microscope has since shown. Of course, where metastases have taken place, results of operation are not at all favorable, recurrence taking place usually very rapidly.

This patient did exceedingly well for five days, when she became very apathetic, and finally lapsed into a sleep from which it was very difficult to rouse her. The urine had been examined twice by Dr. Weidner, previous to the operation, who found neither albumen, casts, sugar, nor any abnormal condition. At the time the alarming symptoms developed, five days after the operation, the nurse was requested to secure a specimen of the urine for examination, but by repeated catheterization none was found. The patient died forty-eight hours after the first symptoms set in without having secreted any urine; having all the indications of severe uremia. Chloroform was used as the anesthetic. There never was a symptom of sepsis, and what occasioned the uremia, unless there was some pre-existing disease of the kidneys, which was not discovered, I am at a loss to say.

The other specimen is from a case of experimental surgery, which we have been doing at the college, being a case of resection of the intestine in a dog. Silk was used, the sutures being put in from the outside in a double row. The dog recovered very nicely and lived eight weeks after the operation, when he died of obstruction. At the autopsy adhesions of the omentum were found throughout at the point of resection, and that part of the gut which was turned in still remains, having formed a valve through which it was almost impossible, with a great deal of pressure—I should say ten pounds—to force any water whatsoever, except a drop at a time. The piece of gut, after being taken out, was stretched over a faucet at the hydrant, and not a drop of water could be forced through the obstruction by the pressure behind it. Allowing the water to remain in for some time, and by stripping downward with the finger, a few drops would gradually trickle through, so there is no doubt about the obstruction being practically complete. What symptoms were produced before the death of the dog I am unable to say. The sutures are still *in situ*, and that part of the gut turned in has not disappeared.

DISCUSSION.

Dr. August Schachner: In this connection I would like to say something which has come to my notice to-day in regard to Maunsell's method of performing an intestinal resection, and which possibly might be the source of serious trouble. As we all know, in Maunsell's method of resection, the sutures take a particularly large purchase on the two divided ends of the intestine, a purchase of about one-quarter of an inch, going through all the coats of the intestine. I had occasion recently to kill a dog upon which I had performed the Maunsell's operation and found that all of these sutures were present in the form of little loops. The sutures had such a strong grasp upon the intestinal walls, that they had never sloughed away, presenting simply a row of loops, I suppose fully large enough to admit the end of a lead pencil. Now it is possible that such a row of loops, hanging into the intestine, might cause the arrest of some of the intestinal contents, and might be the starting-point for an intestinal obstruction. I do not know whether this has ever been mentioned, but I was impressed with the fact that obstruction might be brought about by such a condition after this method of resection. The dog was killed $2\frac{1}{2}$ weeks after the operation. Perfect recovery had taken place, and in the meantime another resection by a different method had been performed on the same animal.

Dr. Carl Weidner: Referring to the first case reported by Dr. Frank, there was no reason for the woman's sudden death, rather I might say for her premature death, except uremia; and the next question is, why should uremia occur? I had examined the urine of this patient before the operation, finding neither albumen, casts, nor any indication of organic kidney lesion. She did well after the operation, there being no indication of sepsis, but she died on the seventh day, symptoms of suppression of the urine having set in, and no urine was secreted for

thirty-six hours before death. There must be some severe shock which takes place in a debilitated patient, making a deep impression upon the nervous mechanism, which results in the arrest of urine. Possibly this may occur in the same manner, as we have sudden arrest of the secretion of a gland, from some shock to the nervous system. We might compare it to the effect of fright upon the digestive functions.

DR. W. C. DUGAN: I remember having seen a case in the City Hospital very much like the one reported by Dr. Frank. The patient came under the observation of Dr. Boggess in the medical ward, and he called me in to see her. The case had been under the care of his predecessor. She had been tapped two or three times for what was supposed to be simple ascites. Dr. Boggess examined the patient and found she had a nodular growth in the *cul-de-sac*, and it was on this account that I was consulted. We found a considerable accumulation of fluid in the cavity, also detected what we took to be several tumors in the pouch of Douglas, extending above the symphysis. It was decided to do an exploratory operation, but we were undecided as to just the nature of the trouble. There were indications of malignancy, rapid loss of flesh, and a general toxic condition. An incision was made and a large quantity of fluid was at once evacuated. We found the left ovary in a condition similar to the specimen exhibited by Dr. Frank, except that the tumor was very much larger. The tapping of the ovarian cyst and the leakage subsequently had allowed the papillomatous growths to become disseminated all over the intestines; I do not think that I ever saw another such condition. You could hardly put your finger down upon the intestine, but you would find several growths varying in size from a millet seed to a robin's egg. At the point where the trocar had been passed through, the omentum had become attached to the abdominal wall, and for a space of several inches there were large deposits all over the viscera. This patient went on very much as the case reported by Dr. Frank, and died without any septic condition, and the only explanation we could suggest was that she simply died from the intense poison from the carcinomatous tissue.

DR. W. H. WATHEN: I was present at the operation reported by Dr. Frank, and when the woman was returned to her room I expressed the belief that she would make an uninterrupted recovery. I am not surprised that Dr. Frank should have stated that there was no sepsis, because I hardly see how there could have been any. The symptoms must have been due to the character of growth that was removed. Cases of carcinoma of the ovaries do not endure operative interference well, and I presume the patient never entirely rallied from the shock of the operation; the kidneys finally ceasing to secrete urine, she died.

DR. LOUIS FRANK: I agree with Dr. Dugan that rupture of these papillomatous and cancerous tumors do cause metastases; papillomatous tumors that rupture very often take on, even after rupture, carcinomatous degeneration, as they do also sometimes before rupture. It is very difficult, and sometimes quite impossible, to tell, macroscopically or microscopically, papillomatous from true carcinomatous tissue, and it is absolutely impossible to determine by either way the point where they merge into one another, or, at times, even clinically. Papillomatous tumors are at times cancerous in character, and, so far as the life of the patient is concerned, they may be regarded almost always as malignant.

As to the justifiability of the operation, I believe that unless there are metastases, or that the patient is in such a weakened state from cachexia or cancerous poisoning, these operations are justifiable; and in looking up the subject I find that Sir Spencer Wells, Lawson Tait, and, others say that they are justifiable. Those who say they are not justifiable seem to be in the minority, though among them are such names as Schröder, who is now dead, and other equally eminent authorities. The French authority, Pozzi, also thinks that the operation is perfectly justifiable, and all authorities, with few exceptions, agree that exploratory incision should be done in all cases, as relief of the ascites alone gives the patient material comfort and lessens the pain present.

DR. W. H. WATHEN: I believe the question of secondary infection of the peritoneum was suggested by the remarks of Dr. Dugan. We found in Lawson Tait's work this subject discussed thoroughly, and he mentions a case where he opened the abdomen and removed a very simple insignificant-looking intra-ligamentous cyst, the patient made a speedy recovery, but died within three months from diffuse malignant disease of the abdominal viscera. We never know from the physical appearance of one of these tumors, or from the physical characteristics of the liquid contained within a cyst of this character, whether the disease is then malignant, or whether it will finally develop a malignant form of trouble. You cannot diagnose a case such as Dr. Frank has reported, or say whether it is malignant or benign until you have opened the abdomen and come in contact with the diseased structures; and you cannot then always make a diagnosis, in fact, very often you cannot. There are some of these papillomatous tumors where the papillomata may be within the cavity of the cyst; where they may have filled the cavity of the cyst penetrating its walls; or where papillomata may have developed upon an ovary that looks macroscopically to be positively malignant, but we find that many of them are not malignant because the patients recover from the operation and remain permanently well.

A little over three years ago a lady from the interior of this State consulted me, having at least four gallons of ascitic fluid in her abdomen, and with a tumor larger than one's fist upon each side. She was very much emaciated, and did not weigh over eighty pounds when the liquid was removed. She was so very feeble that it did not seem possible she would withstand an operation. She recovered from the operation and returned home within a little over two weeks, became fleshy, and has had no trouble since. I removed two of the most typical papillomatous ovaries that I have ever seen, and expected that there would be a return of the trouble within a very short time. We sometimes operate and remove papillomata or cysts arising in the ovary, and find during the operation that the peri-

toneum covering the bowels, and probably the mesentery, the omentum, and the abdominal walls, are studded with papillomata, and we expect the patient to die, but she recovers and the papillomata all disappear.

Therefore, I say that these operations are justifiable, if the patient is in such condition as to withstand surgical treatment, because we cannot tell whether the disease is malignant or not. If it is malignant and we can remove all the diseased structures, I then claim that operation is still justifiable.

REVIEWS.

A Manual of Physiology, with Practical Exercises. By G. N. Stewart, M.A., D.S.C., M.D., D.P.H., Professor of Physiology Western Reserve University. Published by Baillière, Tindall, & Cox, London. Sold by the Cleveland Medical Publishing Co., Cleveland, O.

By a combination of systematic exposition and specific directions for coincident practical work, this manual is designed to meet the needs of modern methods in teaching physiology. Actual contact with the facts not only develops ability to manipulate and observe, but is essential to the acquisition of an adequate knowledge of the science. The author recognizes this, and the great advantage to the student of corresponding didactic instruction and practical work throughout the course. The book is arranged to accomplish this by a section of "Practical Exercises" after the systematic description of each of the various subdivisions. The exposition of the subject is specially clear and concise, and takes cognizance of the results of the most recent researches in the domain of physiology. The value of the comparative method in investigation and study is well emphasized. As the manual is adapted to the use of students in medicine, this feature of the work is of much importance in view of the fact that many of these students lack the preliminary training in biological science which serves to acquaint one with the far-reaching relationships of morphology and physiology, and with the fact that the structures and functions of the human body are but parts of a great plan. The book is well illustrated, many of the cuts being new. The "Practical Exercises" are frequently accompanied by sketches of the animal with the apparatus arranged for experimentation, and these drawings will prove helpful. Such a manual as Dr. Stewart's admits of variation in the arrangement of topics and of elaboration in laboratory procedures if desired, and it will prove a valuable help to teachers and students, both as a text-book and as a guide in laboratory study.

System of Surgery. Edited by Frederic S. Dennis, M.D., Professor, Principles and Practice of Surgery, Bellevue Hospital Medical College; Assisted by John S. Billings, M.D., LL.D. Edin. and Harv., D.C.L. Oxon., Deputy Surgeon-General U. S. A. Vol. III. Philadelphia: Lea Brothers & Co., 1895. Pp. 919.

This volume maintains the reputation established by the preceding volumes, both as to the ability of the authors, and the practical character of its papers. The subjects embraced in this volume relate to the surgery of the regions of the mouth, larynx, and trachea, neck, chest, eye and ear, skin, genito-urinary system, and to syphilis. The number of authors is twelve, and among them we recognize many of the leading writers of this country. All of the authors are American surgeons.

The surgery of the larynx and trachea is treated by Professor Delavan, of New York. Some features of the diseases discussed, of much practical interest, are too cursorily considered. The proper operative procedure in peritonsillar abscess may involve external incision, and the exact limits should be defined. The approach to the abscess by a blunt instrument, as a director, is of the first importance. A quite similar operation is required in some cases of deep and diffuse retro-pharyngeal abscess, but the author only alludes to it, without noticing the precautions necessary to success. There is also no allusion to those troublesome cases of "recurrent tonsilitis," now so successfully treated by the method of Leland of Boston, with a hooked knife with which he tears away the partitions between the crypts. Professor Mudd of St. Louis, treats of the diseases of the mouth and tongue; Professor Porter of Harvard University, of the diseases of the salivary glands; and Dr. Willard Parker of New York, of the surgery of the neck. Professor Dennis discusses the surgical injuries and diseases of the chest, and introduces, at the close of his paper, Bryant's method of relieving esophageal and bronchial obstruction by way of the posterior mediastinum, with illustrations. The diseases of the eye are treated by Professor De Schweinitz of Philadelphia, and the operative surgery of the eye by Professor Noyes of New York. Dr. Gorham Bacon of New York, furnishes an article on the surgery of the ear, in which he discusses mastoid disease in a very practical manner. The surgical diseases of the jaws and teeth are treated by Professor Tiffany of Baltimore, and the surgical diseases of the skin by Professor Hardaway of St. Louis. The surgery of the genito-urinary system is exhaustively treated by Professor White of Philadelphia, assisted by Dr. Wm. H. Furniss. This article occupies 331 pages, and is in itself a very complete treatise on that subject. Professor White discusses the question of castration for hypertrophy of the prostate approvingly. The last one hundred pages are devoted to the subject of syphilis, by Professor Taylor of New York. His name is a guarantee of the high character of the article.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections, from models in the Museum of the Saint Louis Hospital, Paris, with explanatory woodcuts and text, by Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard, and Léon Jacquet. Edited and annoted by J. J. Pringle. Published by F. J. Rebman, London; W. B. Saunders, Philadelphia. In twelve parts.

An examination of Parts I and II of this recent addition to pictorial dermatology, excites a feeling of mingled admiration and astonishment. One cannot help admiring the artistic excellence of these plates and noting their life-

like appearance, which seems more striking, when it is remembered that they are not taken from life, but from wax models of dermatological cases, mostly executed by M. Baretta, for the Museum of the Saint Louis Hospital in Paris. This famous collection is well known to most dermatologists in America, and it is a source of congratulation that many of the typical representations of common skin diseases, which heretofore could only be studied upon the shelves of the museum, are now brought to the notice of the profession in this country by means of this new and excellent atlas.

In Part I are four photo-lithochromes, representing lupus vulgaris, dermatitis herpetiformis, syphilitic chancre of the vulva, and purpura hemorrhagica.

In Part II, we find representations of lupus erythematosus, hypertrophic rosacea, circinate papulo-squamous syphilide, and Xanthoma planum et tuberosum.

When all of the plates are so worthy of commendation, it seems unjust to discriminate, but the illustrations of erythematous lupus and the circinate syphilide are remarkably fine, and perhaps deserve special mention. The text accompanying the plates furnished by the various authors, is concise and practical, and gives, in addition to a brief history of the case, a commentary on both the case in particular and the disease in general, which will prove of interest and value to the reader. A number of woodcuts are scattered through the text and serve to emphasize or elucidate points of differential diagnosis and other matters to which reference is made.

Therapeutics of Infancy and Childhood. By A. Jacobi, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York, etc. Philadelphia: J. B. Lippincott Company. 1896. Pp. 518.

To the readers of the *Archives of Pediatrics* of the past dozen years, much of the material in this book will have a familiar, but not unwelcome appearance, for it has been compiled by the distinguished author from contributions to many numbers of that journal, additions and corrections being made, of course, where indicated.

A work like this, the product of a mature mind, rich in the experience of the subject at issue, is a distinct gain to medical literature. It has long been a matter of surprise that one so well qualified to instruct the general profession, has delayed so long to present his views in comprehensive form. Perhaps it can best be explained by the great activity of the author's life, and the consequent inability to devote the time necessary for such a service. Of course, the profession is the gainer by the delay in the maturity and breadth of treatment of the subject.

Dr. Jacobi is a believer in drugs, we are therefore prepared to learn that his understanding of therapeutics is no mere generalization of statements, no exposition of his broad knowledge of hygiene and dietetics alone, but a comprehensive application to the treatment of disease in children of methods of diet and hygiene when these are indicated, or, of the use of the great variety of materials which are to be found in the pharmacopœia, if such would seem to him more appropriate. One will look in vain in his pages for the highly advertised proprietary remedies. Such a plan may be carried too far, for while overadvertised or loudly advertised remedies certainly tend to make one suspicious as to their real merit, it does not follow that they are necessarily without value, and one should be allowed to chose from among them those which have merit, which can be positively determined, even though the methods by which they are distributed may be objectionable.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 25, 1896, TO MARCH 30, 1896.

Leave of absence for two months and fifteen days, with permission to go beyond sea, is granted Captain Charles F. Mason, assistant surgeon U. S. Military Academy, West Point, N. Y.

The leave of absence for seven days granted Major Joseph K. Corson, surgeon U. S. Army, Fort D. A. Russell, Wyoming, is extended twenty-three days.

First Lieutenant William F. Lippitt, Jr., assistant surgeon, will report in person to Major Henry S. Turrill, surgeon, president of the examining board appointed to meet at Fort Riley, Kan., on Tuesday, April 14, 1896, at 10 o'clock A.M., at such time as he may be required by the board for examination as to his fitness for promotion.

Leave of absence for two months, with permission to apply for an extention of two months, is granted Major Curtis E. Price, surgeon, Fort Sill, Ind. Ter.

First Lieutenant Henry C. Fisher, assistant surgeon, is relieved from duty at Fort Yates, N. Dak., and ordered to Plattsburgh Barracks, N. Y., for duty.

The following-named officers will report in person to Lieutenant-Colonel Charles R. Greenleaf, deputy surgeon general, president of the examining board, appointed to meet at San Francisco, Cal., on Tuesday, April 14, 1896, at 10 o'clock, for examination as to fitness for promotion: First Lieutenant Merritte W. Ireland, assistant surgeon; First Lieutenant Benjamin Brooke, assistant surgeon; First Lieutenant George M. Wells, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING, MARCH 26, 1896.

March 10.—Medical Inspector J. B. Parker to duty in charge of Naval Hospital, Widow's Island, Me., in addition to present duties.

March 11.—Surgeon Thomas Owens placed on the retired list March 10.

March 13.—Surgeon W. R. DuBose detached from the Naval Academy and ordered to the "Terror."

March 16.—Surgeon P. M. Rixey ordered to the Naval Dispensary, Washington.

Assistant Surgeon H. La Motte detached from the Naval Hospital, Chelsea, Mass., and ordered to the receiving ship "Franklin."

Surgeon G. E. H. Harmon detached from the Naval Dispensary, Washington, and ordered to the Naval Academy.

P. A. Surgeon C. H. T. Lowndes ordered to the Washington Navy Yard.

March 23.—Passed Assistant Surgeon B. R. Ward detached from Coast Survey Steamer "Blake" and ordered to the "San Francisco," holding survey on Chaplain J. J. Kane in London, en route.

March 27.—Surgeon J. C. Wise ordered to examination for promotion March 27.

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ORIGINAL ARTICLES.

ON THE NATURE AND TREATMENT OF EXOPHTHALMIC GOITRE, WITH SPECIAL REFERENCE TO THE THYROID THEORY OF THE DISEASE AND TO THE TREATMENT BY THYROIDECTOMY.[1]

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THE THEORIES OF THE NATURE OF EXOPHTHALMIC GOITRE.

EVER since the early descriptions of exophthalmic goitre by Graves in England in 1835, and by Basedow in Germany in 1840, the nature of this affection has been a matter of debate. Numerous theories have been offered to account for the disease, but one by one they have been discarded, for each in turn has failed to account for all the symptoms presented by the patients. The theory of cardiac disease, organic or functional, was the first one to be abandoned. The theory of disease of the sympathetic nerve was largely hypothetical, being based upon an erroneous physiological conception of the action of the sympathetic nerves and upon very doubtful pathological findings. The theory of a primary disease of the vasomotor centre in the medulla oblongata appeared to have a greater amount of support than any other, yet even this had many weak points, and the fact could never be forgotton that in many cases of disease no lesions were found in this region after death. The theory that a general neuropathic constitution predisposed to the disease was doubtless true, but alone, hardly accounted for its development and has been justly looked at with suspicion in England and America, for every physician has seen the disease develop in persons of good nervous constitution. The theory of toxic influences originating in intestinal indigestion has an element of improbability, for this is a common condition while Graves' disease is a rare affection.[2]

It is only within the past few years since the more accurate knowledge of disease of the thyroid gland has been reached by physiological experimentation, by clinical observation in cases of myxedema, of cretinism, and of the various forms of goitre, and by pathological investigations, that a clue has been reached to the problem of the origin of Graves' disease.

The theory which I wish to urge that exophthalmic goitre is due to hyperactivity of the thyroid gland is by no means an original one. It was first proposed by Möbius[1] of Leipsig, in 1886, and in spite of most vigorous opposition has been gradually gaining ground during the past ten years, being now accepted by many authorities in Germany, by Brissaud,[2] Regnault,[2] Joffroy,[2] Boinet, and many others in France; by Greenfield,[3] Maude,[4] Adam,[5] Murray,[6] and Bramwell in England, and by many careful investigators in other countries. It is because the evidence in favor of this theory is not sufficiently appreciated by American physicians that I have brought it forward at this time. In but few American articles has it been discussed, viz.: by Dr. J. Arthur Booth, *Jour. Nerv. and Ment. Diseases*, August, 1894; by Dr. A. R. Oppenheimer, *Ibid.*, April, 1895; by Dr. Stieglitz, *N. Y. Med. Monatschr.*, June, 1895, and by Dr. James J. Putnam, "Trans. Mass. State Med. Soc.," 1895.

I have become converted to this theory by my own experience in the study both of exophthalmic goitre and of myxedema, and I am sure that anyone who has had occasion to observe these two diseases, to notice the striking contrast between them, or to watch the effect of the administration of thyroid extract in myxedema, in cretinism, or in the reduction of obesity, must have been impressed very strongly with the fact that the symptoms of exophthalmic goitre are due to an excess of thyroid secretion in the blood.

This theory will seem more probable if we contrast the symptoms present in myxedema with those present in exophthalmic goitre, and if we

[1] Read before the New York Neurological Society, April 7, 1896.
[2] In 13,520 cases, in the Nervous Department of the Vanderbilt Clinic, thirty-eight cases of Graves' disease only are recorded.

[1] *Schmidt's Jahrb.*, July, 1886; also in *Nothnagel's Spec. Path. u. Therap.*, Vol. XXII, 1896.
[2] Report of the French Congress of Neurologists, 1895. *The Medical Week*, 1895, p. 394.
[3] Bradshaw Lecture, *Brit. Med. Jour.*, December 9, 1893.
[4] *Brain*, 1894.
[5] *Lancet*, 1894, I, 307.
[6] *Twentieth Century System of Medicine*, Vol. V, 1896.

study the symptoms which are produced in patients suffering from myxedema by the administration in excess of thyroid extract.

The essential symptoms of exophthalmic goitre are the swelling of the thyroid gland, the protrusion of the eyeballs, retraction of the lids, and inability to converge the eyes to a near point; the rapid action of the heart and throbbing of the arteries; the burning and perspiring of the skin; the intense nervous excitement with tremor, sleeplessness, and mental irritation; occasional diarrhea, of a watery character; irregularity and rapidity of respiration, with sense of dyspnea, especially on any exertion, and sudden exhaustion, with occasional giving way of the limbs.

CONTRAST BETWEEN MYXEDEMA AND EXOPHTHALMIC GOITRE.

1. It is hardly necessary to mention the fact that in myxedema there is a *primary atrophy* of the *thyroid gland*, or else a destruction of the gland by some cystic growth which may result in the production of myxedematous symptoms associated with a goitre. There are tumors of the thyroid gland whose result is the destruction of the gland tissue by the tumor tissue, and it is in this class of goitre cases only that treatment by thyroid extract, which, as we shall see, is the worst possible form of treatment in exophthalmic goitre, has been of some service.

2. The *appearance of the eyes.* In myxedema there is a marked tendency to abnormal heaviness of the eyelids, so that the upper lid falls and the eyes are never widely open. This falling of of the lid appears to be independent of its thickening by the myxedema. There is also a retraction of the eyeball. I have noticed in all of my cases after a cure of the myxedema that the eyeball had been previously decidedly retracted, so that when the patient was cured and the eyeball was in its natural position the previous retraction, as shown by photographs, became noticeable. The narrowing of the palpebral fissure, by the semiclosure of the eyes, adds to the dull, lifeless expression of the face in myxedema and gives the patient the sleepy look.

In exophthalmic goitre the eyes are abnormally widely open. And even in the cases in which the exophthalmus is not sufficient to interfere with the movement of the upper lid there is a tendency to retraction of this lid so that it does not descend in a normal manner when the patient is told to look downward (Graefe's symptom). The lower lid is also slightly retracted in exophthalmic goitre (Stelwag's symptom). This is more noticeable when the eyes are prominent, but even when they are not it is quite common for the sclera to be visible all around the iris in this disease. The prominence of the eyeballs is of course one of the three chief symptoms, and is, at times, a very painful one, leading occasionally to ulceration of the cornea.[1]

3. The *condition of the heart and arteries* in myxedema is exactly the opposite of the condition found in exophthalmic goitre. In all the cases of myxedema a slow pulse is present. In one of my cases it was habitually 60, in another 62. The pulse is also small and of high tension in myxedema. It is well known that myxedema has been occasionally mistaken for Bright's disease, usually for the form of chronic interstitial nephritis or contracted kidney in which there are high tension pulse, edema, albumin, and hyaline casts in the urine, and nervous symptoms, such as headache, and inability to use the mind.

In sharp contrast to this condition are the rapid, full, large pulse and throbbing arteries, constantly complained of in exophthalmic goitre. As a result of these dilated blood vessels, we have the pulsation of the goitre, the bruit in the neck, and the intense flushing and heat of the skin and the marked increase in the perspiration. In none of my cases of exophthalmic goitre, has the pulse been less than 100 per minute, and often it has risen to 150.

4. *Skin.* In myxedema the skin is thickened, is rough and scaly, is dry, is apt to crack, does not perspire, and the growth of the hair is impaired. The hair becomes dry and brittle, and falls out: the nails become ridged and thickened, and both nails and skin are abnormally discolored by a deposit of blackish pigment beneath the epidermis. The electrical resistance is increased in myxedema on account of the thickness of the skin.

In exophthalmic goitre the skin is particularly soft, thin, fine, and almost transparent, there being little of the fatty tissues naturally present beneath it, so that, as a rule, the patients appear to be slightly emaciated, especially about the cheeks and neck. It is moist, and the perspiration is constantly excessive. It is smooth, and even glossy. The growth of hair is stimulated, and the hair is oily and soft. The nails grow rapidly, and have a glossy appearance almost as if manicured. The electrical resistance is diminished in exophthalmic goitre on account of the increased moisture of the skin.

5. *Temperature.* In myxedema, the patients

[1] For cases see "Trans. of the Ophthal. Soc. of the United Kingdom," Vol. XII, 1886.

suffer constantly from a sense of cold. In warm weather they feel chilly, and in cold weather they suffer extremely from the cold. The body temperature is uniformly depressed, being 97° or 97½° under the tongue in the majority of cases. Even when these patients are warmed artificially by a hot bath or by a very hot atmosphere, they never perspire.

In exophthalmic goitre, patients suffer constantly from a sensation of heat which is at times that of disagreeable burning of the entire skin, so that they are very fond of undressing themselves and exposing their bodies to cool air. They dislike extremely to be in a hot or confined room. They perspire freely, and the temperature is actually elevated at times one-half to one degree. In one of my patients suffering from this disease the temperature was never below 99½° during three months, and often reached 101°.

6. One of the points of the greatest contrast between myxedema and exophthalmic goitre is found in the *mental condition* of the patient. In myxedema there is a particularly dull condition of the mind. It seems impossible for the patients to interest themselves in their ordinary occupation, or in matters which would, under usual circumstances, excite them to mental activity. They are indifferent to their surroundings; they are content to remain without occupation, sitting listlessly, not exerting themselves in any manner, and not occupying their minds in any way. This state of indifference is often attended by a condition of depression, a depression different entirely from that of melancholia, for it is not attended by delusions or produced by a train of thought, and there is none of the variation in the degree of depression which is so commonly observed in true melancholia. In myxedema, hallucinations are quite a prominent symptom. These are chiefly hallucinations of sight, animals and faces being seen chiefly in the evening or at night, and sometimes hallucinations of sound occur, voices being heard. The patients in myxedema recognize the hallucinations as products of the mind. They do not become the basis for delusions, and although annoying they do not lead to insane acts as in hallucinatory insanity. In true melancholia it is to be remembered that hallucinations are not at all common. It is the emotional rather than the sensory sphere which is excited. The condition of mind, therefore, in myxedema is rather to be described as one of partial dementia with some depression of spirits than as a melancholic state. The patient appears to be lacking in all spontaneous mental processes, to be sluggish in thought, and to be depressed thereby; and yet when the mind is excited to perform its ordinary work, it appears to be capable, and shows none of the defects of primary or of terminal dementia. There is never incoherence of speech. There is never the lack of reasoning power.

Let us contrast this condition with that present in exophthalmic goitre. It is a characteristic symptom of patients suffering from this disease that they are mentally alert, extremely active and rapid in all mental processes, and are in a state of psychical excitement. They are quick to catch an idea, imaginative and eager, sanguine and energetic, and are conscious themselves of an unusual flow of thought and intensity of emotion. They even complain that the insomnia from which they suffer is due to the fact that they cannot stop thinking, and they are conscious of a state of mental activity which is unnatural and which is perhaps comparable to the condition present in the early stage of intoxication.[1] In fact, the appearance and manner of these patients often suggests the possibility of their having been unduly stimulated. There is no periodicity in this condition of mental activity. It is not greater at one time than at another, but it is frequently attended by a positive sense of exhaustion, the patients feeling the reaction from this mental strain, and hence becoming depressed and weary after any mental exertion. It is for this reason that patients suffering from exophthalmic goitre are always unduly fatigued by social intercourse, and suffer from a period of collapse after any mental excitement. It is well known that the rest cure, attended by isolation, by absolute mental repose, and by a cessation of all mental activity is of service chiefly in quieting the mental and nervous symptoms of this disease.

While these are the ordinary mental symptoms of exophthalmic goitre, there are cases which go on to a much more active state of mental derangement. Acute mania is known to be a complication of very serious import in the course of this disease.

It has been my fortune to have seen more than one case presenting acute maniacal conditions. One observed in 1892 was especially impressed upon my memory. In this case and in others that I have seen, the state of mental excitement did not correspond at all to that of true acute mania, and there were no hallucinations present. It was a state of abnormal mental activity which might be described as a hysterical insanity, and

[1] See also Maude, *Brit. Med. Jour.*, 1893, II., 892.

yet there were not the outbursts attended by complete loss of self-control which one is accustomed to see in cases of mental hysteria. In a word, the mental condition might be best described as the exact counterpart of the condition of dementia already described as existing in myxedema. In the one case the mind was hampered in all its action, in the other case the mind was stimulated in all its activity.

Associated with the mental activity there is commonly a tendency to physical activity in patients suffering from exophthalmic goitre. They are constantly moving about, and it is very difficult to keep them quiet, the muscular restlessness being very noticeable. There is also a constant tremor in the extremities and often in the muscles of the face. In myxedema, on the other hand, there is a sluggishness and lack of spontaneous movement.

It seems evident, therefore, by this comparison of the essential symptoms in these two diseases that they present counterparts of each other, and that in each organ or function affected in both the symptoms present in the one disease are exactly opposite to those present in the other.

I hardly need remind you that both diseases are most common in women, and both have some relation to the sexual function.

EFFECT OF THYROID EXTRACT IN MYXEDEMA.

We have thus far shown that the symptoms of myxedema and of exophthalmic goitre afford a striking contrast to one another. As myxedema is due to an absence of thyroid secretion, exophthalmic goitre may be reasonably ascribed to an excess of thyroid secretion. This hypothesis receives distinct confirmation from the facts observed in the treatment of myxedema by thyroid extract,[1] and more particularly in the effect of overdoses of this remedy. The symptoms which appear to indicate that too much thyroid extract is being given to a patient suffering from myxedema are (1) a rise of temperature above normal, (2) an increased rapidity of the pulse, (3) a burning sensation with some flushing of the skin, (4) a rapid emaciation, (5) a condition of mental excitement, and (6) exophthalmus.

THE ARGUMENT FROM PATHOLOGY.

It has been already stated that the weak point in all previous theories to account for exophthalmic goitre, has been the absence of uniform pathological findings in the cases which have been investigated. Singularly enough, pathologists have neglected to record the condition of the thyroid gland in this disease until very recently. Byron Bramwell was among the first to describe the changes in the thyroid gland. He said, in 1891, that in exophthalmic goitre the condition usually present in the thyroid was comparable to an acute catarrhal process, with great increase and an altered character of the epithelial cells, an apparent proliferation throughout the gland and a great diminution of the formed colloid material. In other words the essential change was one in which the process of secretion was greatly exaggerated and altered in character.[1] Greenfield described more fully the great significance and uniform character of the changes present in the thyroid gland, and in his interesting Bradshaw lecture,[2] will be found the most satisfactory account of what is doubtless the constant lesion present in this affection, namely: a true hypertrophy of the glandular elements of the gland with increase of its secretion, and possibly some change in the character of that secretion. His findings have been abundantly confirmed by other investigators in various countries,[3] and in all recent autopsies the same changes in the thyroid gland have been demonstrated. These changes are exactly such as would occur in a gland whose functional activity was greatly increased, and whose actual size was enlarged in accordance with this function. They are quite comparable to the changes undergone by the mammary gland during the process of lactation, not really pathological in nature, but what one might consider a physiological hypertrophy.

The objection which has been raised, that in a few cases of this disease there is no enlargement of the thyroid gland, is not a valid one. For it is perfectly possible for a gland to show a great hyperactivity without actual enlargement, as for example, the salivary glands in a state of salivation; or the mammary gland in a multipara. As to the question of the actual change in the character of the secretion of the gland in exophthalmic goitre we as yet know very little. That is a subject requiring further investigation.

CONSIDERATIONS REGARDING TREATMENT.

If the theory of exophthalmic goitre here stated is the correct one, it is necessary for us to bring into accord with it some of the successful results of the various forms of treatment which have been recommended for this disease. It is

[1] See also Canter, *Annales de la Soc. Med. Chir. de Liege*, January, 1894, p. 12.

[1] *Edin. Med. Jour.*, 1891, Pt. II, p. 1044.
[2] *Brit. Med. Jour.*, December 9, 1893.
[3] Reymond, *Bull. d. l. Soc. Anat. de Paris*, Sec. VII, No. 18; Walter Edmunds, *Brit. Med. Jour.*, May 25, 1895.

well known that a very large proportion of patients who suffer from exophthalmic goitre, recover either entirely, or for a considerable length of time.[1] Such recovery is of course inconsistant with the idea of a permanent destructive lesion of any part of the body and is only possible in a functional disturbance. If the cause of the disease is hypersecretion of the thyroid gland, a reduction of that secretion to its normal amount would result in a cure, hence there is nothing in the theory advanced that is against this successful result. But when the enormous number of remedies, which have been brought forward, are reviewed, it is not easy to understand in what way the result in any individual case has been accomplished.

If we review the various methods of treatment which have been proposed, it is perhaps possible to explain the success obtained by the theory that these various remedies have in some manner effected a diminution in the activity of the thyroid gland. Thus the remedy most employed in England is belladonna, and it is not improbable that this has a specific action upon the thyroid gland as it has upon other glands of the body in arresting its secretion. I can report a recent case, a girl aged seventeen, with all the characteristic symptoms present one year, who has been very greatly improved in two months by doses of belladonna carried to the physiological limit.

The rest cure is probably the most successful of all the methods employed in the treatment of exophthalmic goitre,[2] and this, together with the use of iron and tonics, accomplishes the purpose by quieting the general nervous irritability. And this leads us to refer to the very marked effect of the mental condition upon the symptoms of exophthalmic goitre. We know from daily experience that the mind has a distinct action upon the various glands of the body; thus the secretion of tears is almost entirely produced by mental impressions; the secretion of saliva is also markedly stimulated by sensory impressions; the secretion of gastric juice and the whole process of digestion are decidedly affected by mental conditions, as is markedly evidenced in the malnutrition and malassimilation present in cerebral neurasthenia and in the various forms of insanity. We have presumptive evidence, therefore, that the mental condition may affect the secretion of the thyroid gland, and there is an overwhelming amount of testimony to the effect that the onset of exophthalmic goitre can be traced to mental emotion, especially of the nature of fright, dread, and anxiety. It is impossible, therefore, to ignore the mutual relation between a restful state of the mind without anxiety, and a diminution or more natural secretion in the glands of the body. Hence it seems probable that the success of the rest cure in these cases is due to the little understood, but powerful effect of the mental state upon bodily functions.

Electricity is an agent which has been greatly vaunted in the treatment of exophthalmic goitre. Inasmuch as various methods of its application have met with success in certain hands and the same methods have utterly failed in others, it is difficult to determine the real value of this therapeutic agent. It is possible that it may act through the mind by suggestion. It is also possible that it may have a distinct influence upon the secretion of the gland, either by a catalytic action of the galvanic current or by a compression of the gland exerted through the muscles, which are excited by the strong faradic current.[1]

I am informed by Dr. Rockwell, whose experience is probably greater than that of anyone else in this city in the electrical treatment of this disease, that his greatest successes were obtained by means of very strong galvanic currents (60 milleamperes), applied through a clay electrode directly to the gland, and such a current would undoubtedly result in chemical changes within the gland, modifying its secretion. Dr. Putnam of Boston favors strong faradic currents causing contraction of the muscles of the neck and compression of the gland.

It is somewhat difficult to explain the favorable action secured by aconitia and veratrum viride, although the testimony in favor of these drugs is too definite to be ignored. They are both known to have a distinct action in modifying the secretion of the glands of the body. It is also possible that by their depressant influence upon the heart they have reduced materially the flow of blood through the thyroid gland, which, being near the heart, would be manifestly affected by the force of its activity. If ergot contracts the medium-sized arteries, its favorable action may be ascribed to diminution in the blood supply of the gland.

It is thus evident that the effect of remedies which have been urged in this disease can possibly be explained by their known effects in diminishing the amount of thyroid juice produced within the body.

I desire to mention one remedy which in several cases has seemed to me to be of great service,

[1] See also J. M. Taylor, Medical News, December 16, 1893, and Möbius, *l. c.*

[2] See J. Madison Taylor, Medical News, December 16, 1893.

[1] Vigoroux.

namely, the glycero-phosphate of sodium, in twenty-grain doses, three or four times a day. This was first used by Trachewsky in Kocher's clinic,[1] and was found to have the effect of diminishing the size of enlarged thyroid glands. It has also been successful in the hands of Chibret.[2] Under treatment by this drug alone, a patient in the Presbyterian Hospital was markedly benefited within three weeks. A second patient to whom various forms of treatment were given by me for one and a half years, appreciated within two weeks the fact that this remedy had been of more decided benefit in every direction than any other which had been used in the previous period.

THE TREATMENT BY THYROID AND THYMUS EXTRACTS.

It is well known that within the last few months attempts have been made to treat patients suffering from exophthalmic goitre by means of the administration of thyroid extract.[3] This has been done in a purely empirical way. The concensus of opinion, however, seems to be that the thyroid treatment for exophthalmic goitre is not only of no service, but is actually of great injury to the patients. Very numerous reports have appeared in all parts of the world to the effect that patients suffering from exophthalmic goitre have had all their symptoms markedly increased by the use of thyroid extract. Thus, in a patient of Auld[4] the symptoms of the disease which had previously subsided were all brought back by the administration of this extract. In patients of Nasse[5] and Brissac,[6] Béclère[6] and Stabel,[7] the symptoms present were very much exaggerated but subsided when the thyroid was stopped, and in one unfortunate case on record a fatal result appears to have followed soon after the use of the thyroid.

If the theory of the disease here defended is correct, if exophthalmic goitre is due to an excess of thyroid secretion, there is every reason why the administration of thyroid should be avoided.

It may be affirmed, however, that if there is a well authenticated case on record of improvement of the disease under the administration of thyroid extract, it would entirely overthrow the theory here defended. I do not think that the cases of supposed improvement, of which a few have been reported, will bear thorough and critical examination. It is well known that the symptoms of tachycardia, exophthalmus, and general nervousness, have been occasionally associated with tumors in the neck, near to, but not involving the thyroid gland. In fact, Buschan[1] has attempted to draw a sharp line between primary cases of exophthalmic goitre and secondary cases of exophthalmic goitre: the latter consisting of two or more of the symptoms of the disease co-existing with other diseases of the thyroid gland. It cannot be denied that such a distinction appears to be valid. And admitting the fact that in ordinary goitre, in which the secretion of thyroid is arrested or perverted by the existence of the tumor, beneficial results have followed the use of thyroid extract, as reported by Bruns,[2] it seems possible to explain these cases of beneficial use of the drug on the theory that the patients were really suffering from a secondary form of exophthalmic goitre.

Another fact must be mentioned in this connection, namely: that there are some statements in favor of the use of thymus extract in the treatment of exophthalmic goitre. The origin of this treatment is as follows: Owen reported a case of exophthalmic goitre cured by the use of thyroid glands given in bulk. Some months after, he published a correction of this statement, having ascertained that the patient had been fed upon thymus gland exclusively, and had never received any thyroid gland. He ascribed the improvement therefore to the thymus, and following in his steps others have tried the use of thymus in exophthalmic goitre. Watson Williams[3] reports a case very carefully observed, in a hospital, in which this treatment, like that by thyroid extract, was of positive harm to the patient.

We know at present very little regarding the thymus gland or its use. It is a structure which is known to atrophy soon after infancy, and it appears to be rudimentary in the majority of adults. There are a few observations which lend support to the statement that in exophthalmic goitre it has been found increased in size after death. Such increase in glandular structure, however, associated with exophthalmic goitre is not unknown. Thus, Bowman[4] records a case in which the lachrymal and parotid glands were much enlarged, and Higgins[5] records a case in which all the lymphatic glands within the thorax were much developed, and one writer records a case of a man whose mammary glands were as much enlarged and as tender as those of a woman in the later stages of pregnancy. This glandular enlargement subsided

[1] Kocher, *Verhandlun. d. Deut. Gesell. f. Chirurg.*, 1895.
[2] *Medical Week*, 1895, p. 91.
[3] Voisin, *Gaz. Med. de Paris*, 1894, p. 513.
[4] *Brit. Med. Jour.*, July 7, 1894.
[5] *Verhandl. d. Deut. Gesell. f. Chir.*, 1895.
[6] *Medical Record*, November 24, 1894.
[7] Stabel, *Berl. klin. Wochen.*, February 3, 1896.

[1] Buschan, "Die Basedowische Krankheit," Wien, 1894.
[2] Bruns, *Beiträge z. klin. Chirurgie*, XIII, 1895, p. 393.
[3] *Clinical Journal*, December 11, 1895.
[4] "Trans. Ophthal. Soc. of the United Kingdom," 1895.
[5] *Ibid.*

soon after the extirpation of the thyroid gland, which relieved the other symptoms of exophthalmic goitre in his case.

With our present knowledge it cannot be stated whether enlargement of the thymus, if it occurs in exophthalmic goitre, is merely an homologous hypertrophy or a compensatory hypertrophy. In the former case it would be analogous to the enlargement of the thyroid gland, under which circumstances the administration of thymus would be distinctly contra-indicated. In the latter case it might be regarded as an effort of nature to combat the influence produced by the increase of thyroid secretion, and in this case the administration of thymus would be distinctly indicated. Until further facts are at hand with regard to the function of this gland, or with regard to its effects in exophthalmic goitre, we cannot reach a decision as to its use. It is always to be remembered that reports of benefit attained by the use of a remedy are more likely to be published than those of failures, and unless the testimony in favor of the use of thymus were much more voluminous and uniform than at present, I should not advise its trial.

THE QUESTION OF OPERATIVE TREATMENT.

If the conclusion thus reached is valid, that exophthalmic goitre is due to an excessive secretion of the thyroid gland, the most rational form of treatment for the disease would appear to be the removal of the gland. Yet surgical treatment is not to be undertaken rashly in this disease. We have seen already that there is a very decided tendency to recovery, either spontaneously or under the influence of treatment, and therefore it is only in the most obstinate cases of very severe type, or in the cases where life is endangered by the sudden swelling of the neck to the extent of producing asphyxia, that the question of operation is to be seriously considered. There are, however, many cases which, after a longer or shorter period, devolop such serious symptoms and remain unrelieved so long by medical treatment that the question of operation must be faced. It is therefore necessary to review such facts as can be gathered regarding the result of surgical treatment in exophthalmic goitre.

In December, 1893, Putnam collected fifty-one cases of exophthalmic goitre which has been operated upon.[1] In December, 1894, Buschan was able to collect ninety-eight cases of operation.[2] I have been able to find ninety-two additional cases in the literature of 1895, and especially in the American journals, bringing the total number of cases operated up to 190.[1] Of this number twenty-three cases died immediately after the operation. Seventy-four cases are reported as entirely cured. Forty-five cases are reported as improved, and three cases are reported as not improved; in regard to the remainder no final results are reported. The occurrence of sudden death immediately after the operation, or within two or three days of it, is a fact of very serious import. Death after these operations is not owing to hemorrhage nor to any want of aseptic precautions. In all the cases reported there have been a sudden rise of temperature to 105°, 106°, or 107°; a very rapid pulse (180 to 200); extreme nervous excitability and restlessness, with great anxiety and distress; profuse sweating, and, finally, collapse and death from heart failure. The most reasonable explanation for this series of symptoms is a sudden poisoning of the entire system by an excessive absorption of thyroid juice suddenly produced during the operation. This may perhaps be induced by the necessary handling of the gland during the operation, or by the absorption of its secretions through the open blood vessels which have been torn or divided, or from a hypersecretion of the gland with a consequent absorption going on during the operation, possibly from the effects of ether, as that is well known to be a dangerous anesthetic in exophthalmic goitre. The theory of an increased secretion of the gland is supported by the fact that in the operation advised by Jaboulay, and named by him exo-thyro-pexie (in which the tissues on the neck are divided, the gland is brought forward and left exposed to the air, but not divided or removed), there has always been noticed a large amount of thyroid se-

[1] *Journal of Nervous and Mental Diseases*, December, 1893.
[2] *Wien. Med. Wochen.*, Nos. 51 and 52, 1894.

[1] The following named physicians and surgeons have reported cases of exophthalmic goitre operated upon:
Andry, Barker, Bernard, Bergmann, Billroth, Bockel, Booth-Curtis (6), Bottini, Briner-Kronlein (8), Brissaud, Bristowe, Caird, Chretien, Cohn, Coley, Determeyer, Dressmann (3), Dubreuil, Edwards, Eulenberg, Frank (4), Fraser-Lister, Ganser (2), Gerster, Guttman, Hahn (2), Halsted (3), Hartley (3), Jones (2), Kammerer (2), Kelly, Kocher (34), Kummell, Lediard, Lavise, Lemke (8), Lloyd (2), Mannheim (3), Messopust, Mikulicz (11), Möbius, McCosh, Markoe (4), Neumann, Nunneley (6), Newton, Ollier, Paul (2), Pean, Putnam (3), Rehn (9), Roux (5), Ruprecht, Ray (5), Riedel (4), Rotter, Smith, Schuchfardt, Schuler, Sickinger, Spire, Sprengel, Steltzner (2), Sulzer (3), Stierlein (2), Stockman, Strumpell, Tillaux (2), Troje, Tuffier, Trendelenburg, Tessier-Dolbeau, Weideman, Wette (4), Watson (3), Wolff (3).
Reference to these operations will be found in the following articles:
Wette, *Arch. f. klin. Chir.*, 1892, XLIV, Hefte 2 and 3.
Putnam, *Jour. Nerv. and Mental Diseases*, December, 1893.
Lemke, *Deut. Med. Woch.*, 1894, No. 42,
Curtis-McCosh, *Annals of Surgery*, 1895, Vol. XXII, p. 793.
Chamberlin, *Thèse de Paris*, 1895.
Report of French Neurol. Cong., *Medical Week*, 1895, p. 394.
Briner, *Beitrag z. klin. Chir.*, Vol. XII.
Mikulicz, *Verhand. d. deut. Gessell. f. Chir.*, 1895.
Many of the American cases have been put at my disposal by the surgeons themselves.

cretion exuded from the surface of the gland into the dressings. Had this extraordinary secretion been absorbed into the blood it would undoubtedly have produced poisonous effects. That manipulations of the gland of any kind are liable to produce an increase in nervous excitability and in the rapidity of the pulse is a fact which every patient suffering from exophthalmic goitre is aware. Hence they uniformly shrink from anything compressing the neck or from any attempt to handle the goitre. Such handling and pressure is usually inevitable during the operation, and seems to me to be the natural explanation for the occurrence of poisoning following the operation. It may not, however, be the only explanation, for in three cases of which I have knowledge, sudden death has followed when the goitre removed was an extremely small one. I cannot, therefore, but believe that it is possible that the secretion of the gland is stimulated by the inhalation of an anesthetic, or by the anxiety preceding the operation, and therefore believe that the operation should be done, if possible, under cocaine rather than ether, as recommended by Kocher.

It is the fact of these sudden deaths, occurring during or after operation, which has, I believe, prevented a more extensive adoption of this form of treatment in this disease, and it is because such deaths have been inexplicable that they have been so freely and fully reported. Hence I believe that the statistics already given are fairly reliable, although it may be that the percentage of deaths (12) is somewhat in excess of the truth.

It will be noticed that seventy-four cases are reported as cured. Many of these cases have been watched two, three, or four years before such reports have been made, during which time the cure has been permanent. Hence the charge cannot be made that the reports have been published too soon after the operation to determine its ultimate effects. As a rule, the cures have not resulted immediately after the operation. There has been a steady progressive improvement during two, three, or four months, until finally the cure has been reached. The first symptom to improve is the tachycardia. In one case (for the privilege of reporting which I am indebted to Dr. B. Farquhar Curtis) the pulse diminished during the operation from 120 to 80, and remained constantly below 100 after the operation. In the majority of cases the pulse has been notably slowed within twenty-four hours of the operation. The second set of symptoms to subside subsequent to operation are the nervous excitability and restlessness and the tremor. These symptoms are so distressing to the patients that the relief which they obtain in getting rid of them in almost every case leads to a feeling of great gratitude that the operation has been performed. A number of patients whom I have examined subsequent to the operation, through the kindness of Dr. Curtis and Dr. Markoe, have expressed themselves as feeling very much better, even before the exophthalmus had been at all noticeably decreased.

Together with the subsidence of the nervous symptoms, there is a gradual diminution in the sense of heat and in the perspiration and the feeling of giving way of the limbs, and the uncertainty in gait also soon disappears.

The exophthalmus persists longer than any other symptom. Some cases are reported in which the exophthalmus has persisted for a year after the operation, though in almost all cases it has been noticeably less. It finally passes away. It must be admitted that there is no reasonable explanation for the existence of exophthalmus on any of the known theories of Graves' disease. The cases which have been reported here as cured are cases in which all of the symptoms have actually subsided.

There are forty-five cases that are reported as improved. In these cases it is the exophthalmus which has remained, or the liability to a rapid action of the heart, with nervousness, on any exertion.

I think it may be said in conclusion that in the severe and intractable cases of exophthalmic goitre in which rest-cure and medicinal treatment have failed to relieve, the operation of extirpation of the thyroid gland must be considered as justifiable, and should be advocated by physicians. It should not be undertaken by surgeons hastily, or without some experience. The surgeons who have been most successful in the past few years are those who have had the largest experience in the extirpation of goitres. The respective merits of the various operations proposed cannot be discussed in this place. Some surgeons prefer an almost complete extirpation of the gland, though it is always to be remembered that a small portion of the gland must be allowed to remain, else the patient will develop symptoms of myxedema.

Some surgeons prefer the operation of tying three or four of the arteries entering the gland, although this operation is almost as difficult as that of extirpation, and is not by any means uniformly successful, the number of new vessels entering the gland being so great as to keep up its size and nutrition even after the main vessels have been tied. Others prefer the operation of

Jaboulay of exothyropexie, in which the gland is exposed, drawn forward into an open wound, and then allowed gradually to contract and dry up. This is not always successful, and leaves a very ugly scar in the neck. It is, however, safer than either of the other operations, Jaboulay having reported fourteen cases successfully treated by this method without a death.

CONCLUSIONS.

1. It seems probable that the symptoms of exophthalmic goitre are due to an excess of thyroid juice, either of normal or abnormal character, circulating in the blood and acting directly upon the vasomotor and nervous systems and upon the muscles.

2. It seems probable that the best treatment for the disease is to arrest the secretion of the thyroid gland or to remove the gland from the body.

THE MANAGEMENT OF PLACENTA PRÆVIA—WITH REPORT OF FOUR CASES.[1]

By J. NOER, M.D.,
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Placenta prævia is ranked by all obstetricians as one of the most formidable and dangerous pathological conditions that can be met with in obstetric practise. It is most unfortunate that there should be, among leading authorities on obstetrics, so much learned obscurity and diversity of opinion regarding the pathology and treatment of this condition. The present state of knowledge regarding the cause and the pathological changes that are responsible for this peculiar implantation if the placenta may not warrant dogmatic statements; yet it would seem that we are in possession of sufficient statistical if not scientific data to warrant very decided and positive conclusions regarding treatment. Positive conclusions may be incorrect, but they tend to produce action in a definite direction, producing results that can be estimated and weighed in the light of statistical evidence. Multiplicity of theories produce nothing but indirection, and are a source of much annoyance to the inexperienced. They are certainly often responsible for the mismanagement of placenta prævia.

"By placenta prævia," says Playfair, "we mean the insertion of the placenta at the lower segment of the uterine cavity, so that part of it is situated wholly or partially over the internal os uteri." Granted that we have a condition of this kind, what are we to do about it? A diagnosis cannot be made, nor is suspicion aroused till there is sufficient dilatation of the cervix to produce a hemorrhage more or less extensive. When this occurs the patient is probably in the seventh or eighth month of utero-gestation. Diagnosis can, as a rule, be made without difficulty at this period.

The hemorrhage before, during, and after delivery, is the all-important consideration in these cases, and to guard against this danger must be the chief aim of all treatment. By reason of the low situation of the placenta the imperfect retraction of the uterus and the tears that are likely to result during artificial delivery, the liability to sepsis is greatly increased, and must be counteracted by the most rigid asepsis.

Regarding the source and the cause of the hemorrhage authorities are at variance. It seems, however, entirely rational to *assume* that the placental site is the source of the hemorrhage, the bleeding being caused by the partial separation of the placenta due to the expansion of the lower uterine segment during the latter months of gestation. Now if the hemorrhage be due to placental separation, it must of necessity be irrational and unjustifiable to leave these cases to nature or to a mere palliative or tentative treatment. Braxton Hicks' rule,[1] viz: "After diagnosis is made, always proceed as early as possible to terminate pregnancy," is imperative in these cases. It may not, however, be possible to at once empty the uterus, hence various palliative measures, as tamponade, rest in bed, and opium may be resorted to, to gain time to obtain assistance, and to make such arrangements as may be deemed necessary for artificial delivery. The use of ergot has been quite universally condemned by recent authorities, while the use of the tampon has fared but little better. Ergot is no doubt dangerous to the life of the child, but if it be freely used it will arrest the hemorrhage, especially if the placenta be one of lateral implantation.

The following case illustrates the utility as well as the danger of ergot:

Case I.—On the night of November 8, 1890, a summons called me six miles out of town to a case of labor, a note from the attending physician stating that he had a case of placenta prævia which demanded assistance, chloroform, and forceps. The patient was forty years of age, and in labor at term with her ninth child. There had been no untoward symptoms during gestation, and labor began naturally without any suspicion of the abnormal condition till a sudden gush of blood astonished the patient and physician. Ergot was at once administered in very decided doses. This soon produced severe, almost continuous pains, which forced the

[1] Read before Wis. State Medical Society, held at Superior, Wis., June, 1895.

[1] *British Medical Journal*, November 30, 1889.

presenting head down into the pelvis, and effectually stopped the hemorrhage. When I arrived, about three hours after the first gush of blood, there was absolutely no hemorrhage, nor could any occur, as the pains were severe and continuous, the head well down in the pelvic cavity compressing the presenting placenta against its bony walls.

As the patient was suffering severely, we deemed it best to deliver at once with instruments. The patient being chloroformed, I applied the forceps and promptly delivered a large, dead child. The mother had a rapid and uneventful convalescence.

It is possible that the ergot may in this instance have been detrimental to the child's life, but as it undoubtedly saved the mother, its use must be justified.

No absolute routine rule of practise can possibly be laid down in such a way as to fit every case and condition that may arise. In a case of placenta prævia a person must apply his knowledge of the condition, and deal with the exigencies that may arise with calm judgment and logical reasoning. The situation of the placenta, whether lateral or central, period of gestation, the distance of the patient from the physician, together with the conditions as to sepsis, the operative skill of the attendant and his assistant, if he have one, will have a bearing in the management of every case. Delivery at once, diagnosis being established, by bipolar version is undoubtedly a good routine practise, and gives as good results, both as regards mother and child, as any method of treatment yet put into practise. This might not, however, be a safe or practicable procedure if you are without assistance and without operative skill, and out in the country miles distant from skilled assistance. Under these circumstances the tampon, applied with antiseptic precautions, is the most reliable temporary expedient. It should be applied in such a way, with Sims' speculum, woman in left lateral position, as to thoroughly compress the cervix and lower uterine segment. A T bandage should then be applied and the patient kept in the recumbent position. The bladder should be evacuated with a catheter under aseptic precautions.

Under these circumstances, and with the precautions enumerated, the tampon is allowable and is the most certain and safe means to control the hemorrhage. The tampon will not only stop the hemorrhage but will ordinarily bring on pains, dilating the os preparatory to delivery by operative means. The following case illustrates the utility of tamponade:

Case II.—On the night of November 27, 1892, I was called to go out ten miles from the city to attend a case of "flooding." The patient, Mrs. T. H., aged forty-one years, was pregnant 8½ months with her ninth child. The hemorrhage had ceased before my arrival, but the evidences of its occurrence were apparent in the blanched visage of the patient, the rapid, almost imperceptible pulse, and the syncope, which occurred on the slightest movement.

The bleeding must have been very profuse, as there was a stream of blood along the floor, a pool under the bed, and perfect saturation of mattress for a large area about the patient. The woman was large and stout. Physical examination revealed a softened open os, inside of which could be felt a soft, boggy mass, undoubtedly the placenta. The head of the child could be felt presenting at the superior pelvic strait. The surroundings of the patient as to cleanliness, assistance, etc., were very unfavorable. The following treatment was therefore adopted: Squibbs' ergot, 2 grms.; strychnin sulph., .005, both given hypodermically. A hot 1–2000 sublimate vaginal douche was admininistered, after which a vaginal tampon was inserted and a T bandage applied. I remained with the patient about three hours. By this time she revived and expressed herself as feeling very well. There were no further signs of hemorrhage, nor were there any labor pains. I therefore ventured to leave the patient in charge of a midwife, who was instructed how to pass catheter and not to disturb the tampon, but to let it be pushed out by the presenting head in case labor pains should come on before my return. In about ten hours I returned to find that Mrs. T. H. had a short time previously been delivered of a strong, healthy child. There had been but little hemorrhage during this time. The mother had an uneventful recovery and the child lived and prospered.

Lomer[1] of Berlin, who has carefully studied this subject and brought together a large number of cases, advocates very forcibly the treatment by premature labor and bipolar version. He says: "Induce labor at once. Turn as soon as you can get one or two fingers through the cervix. If the placenta is in your way try to rupture the membranes at its margin; but if this is not feasible, do not lose time; perforate the placenta with your fingers, get hold of a leg as soon as possible and pull it down. Do not extract the child then; let it come by itself or at least only assist its natural expulsion by gentle and rare traction." "Do away," he says, "with the tampon, as much as possible; it is a dangerous thing, for it favors infection and valuable time is lost in its application."

More than usual care should be bestowed on these cases after delivery. The loss of blood, the lacerations which are apt to occur from artificial delivery, vastly increases the shock and prostra-

[1] Professor Lomer, *Am. Jour. Obstet. and Diseases of Women and Children*. December, 1884.

tion. We have, therefore, a condition which renders our patient very liable to septic complications and *post-partum* hemorrhage. The administration of ergot, together with tonic doses of strychnia, is indicated the first week after labor. The strychnia will favor muscular tonicity, while the ergot will promote involution of the uterus and tend to prevent *post-partum* hemorrhage.

A copious vaginal and intra-uterine douche of boiled water, with some mild antiseptic like boric acid, or potassium permanganate, or creolin, should be administered immediately after labor, and an aseptic pad applied.

As an addition to the literature on the subject under consideration brief reports of the following cases are submitted:

Case III.—Mrs. C. C. E., aged forty, pregnant seven months with her eighth child, had a hemorrhage on the night of June 7, 1891. Examination to ascertain the cause of hemorrhage negative. Patient remained in bed three days, when she returned to her household duties. In about a month there was a slight recurrence of hemorrhage which ceased before my arrival. Cervix was soft and open, but placenta could not be felt by the examining finger. Treatment palliative, and patient kept quiet under close observation; two weeks later there was another and profuse hemorrhage. It occurred in the night, and had ceased before my arrival, in less than half an hour after its commencement. Placenta prævia was suspected and suggested on the second hemorrhage, but could not be demonstrated till after the third had occurred. Patient was now thoroughly tamponed under antiseptic precautions, and later delivered by version. The second day after delivery the patient had a violent chill, followed by a high temperature and the development of an extensive pneumonia. Three days after the onset of the fever there occurred a profuse uterine hemorrhage. To stop the bleeding a hypodermic injection of ergotin was given, and ice applied to the abdomen. These measures not affording immediate relief, a piece of ice the size of a small hen's egg was passed into the uterine cavity, which at once arrested the hemorrhage. A liberal use of stimulants, a few hypodermics of atropin, brought about reaction and restored the ebbing tide of life. The pneumonia was very extensive and was probably of septic origin. Gangrene of one lung occurred at a later period but the patient finally made a good recovery, after being bed-ridden for about two months.

Case IV.—Mrs. F. A., aged thirty-two, multipara. On June 29, 1893, at 2 A.M., she was taken with labor pains, an old, ignorant midwife being in attendance. The patient had bled a few times during gestation, but as it ceased spontaneously nothing was thought of it. Labor progressed naturally for about two hours when a sudden severe hemorrhage astonished the attendants. The midwife thought it might stop of itself, hence did not call a physician till bleeding had continued for three hours. Three hours more elapsed before her doctor arrived. When the doctor arrived the patient was completely exsanguinated. The doctor introduced tampon and gave stimulants pending the arrival of assistance. When I reached the scene of trouble the patient was comatose, pulseless, and delirious. The uterus still made efforts to expel its contents. The head was presenting at the brim of the pelvis, placenta being wedged in to one side. After a hurried consultation it was decided to deliver at once by podalic version as the only hope of saving the mother, the child being already dead. Version was difficult, but I succeeded in delivering the child in a comparatively short time. The mother failed to revive and expired in less than half an hour after operation.

THE IMPORTANCE OF SUPPURATIVE DISEASE OF THE MIDDLE EAR.

By CHARLES D. JONES, M.D.
of Malden, Mass.

It is undoubtedly a fact that disease of the middle ear is too lightly regarded. The number of persons who are content to attend to their affairs for months or years with suppurating ears is large, immensely larger than it would be if the disease were treated when it commenced; and much larger than it would be if it were treated at any stage of the disease. An acute suppuration is too often allowed to pursue its course undisturbed, the idea being that nothing should be done to interfere with the workings of nature.

The time to treat a suppurative disease of the tympanum is of course at its commencement, but most satisfactory results usually follow treatment even after years of suppuration; results which are occasionally as striking and satisfactory as any in surgery.

From the cases which I have had lately in private practice I have selected three for consideration. Each of these possesses details which make it peculiarly instructive:

Case I.—A girl, age eight years, was first seen February 11, 1895. One week previous she had complained of some pain in right ear. A few drops of chloroform and tr. opii. were applied locally by a member of the family and the discomfort soon passed away. But during the next few days she gradually fell into a comatose state, there were no particular symptoms, at least the family had noticed none. When first seen in consultation she was completely unconscious and presented typical cerebral symptoms of grave character. She was lying on the bed with the eyes closed; took no notice of anyone; occasionally she would open

her eyes and look at her father, but without giving any sign of recognition. Every few minutes she would shriek with a loud cry, most distressing to hear, and so loudly that conversation could hardly be heard in the room. This cephalic cry was very marked and characteristic. At this time she had not spoken for four or five days. Temperature normal, pulse good, bowels constipated, pupils equal and reacted normally to light. A little milk, which the nurse placed in her mouth, was swallowed.

Under ether the right ear was examined and the following conditions noted:

Occupying the site of the extreme posterior portion of the drum membrane was a dark-red, bulging tumor. The posterior and upper surface of the adjacent wall of the external meatus was considerably congested. No involvment of the mastoid could be made out. A thorough paracentesis was done, liberating a moderate amount of blood. No pus was seen, though a small amount could not have been detected in the presence of the hemorrhage. The ear was then cleaned antiseptically and dried out when the drum membrane was seen to occupy its normal position. It had, of course, lost its lustre and was gray and congested. The left ear was then examined. The membrana tympani looked healthy except near the posterior border, here were two or three little spots of bright red blood, which could be wiped off with the cotton probe, showing the posterior border of the membrana tympani a little congested but not bulging. A small incision made in the membrane disclosed nothing. Warm antiseptic douche in both ears. Calomel in small, repeated doses.

February 12th. After recovering from the ether she screamed but a few times and not as badly as before. Had had several hours quiet sleep. This morning she spoke for the first time in several days. Lies quietly in bed with eyes open but seems to take no notice of anything. Takes nourishment freely. Bowels had moved once. General condition much better and the ear was not inspected.

February 13th. Better: began to talk.

February 15th. Her attending physician telephoned that she was "all right and playing with her doll yesterday."

The recovery after this was without interruption.

The contemplation of this case suggests much of interest and instruction. An inflammation began in the right ear with some pain. This inflammation progressed to the neighboring regions and undoubtedly caused a localized inflammation of the dura mater near the tegmen tympani. Buck states that this is a frequent sequel in these cases. The path of connection with the dura mater may be along the sheaths of the small vessels which pierce the wall of the tympanum. In rarer cases a particularly easy entrance exists from the fact that union of the petrous and squamous bones has not taken place. This union normally occurs about a year after birth, but it may be delayed for several years, and it seems very probable that such was the condition here. Concerning the anatomical conditions I shall speak later on. The cerebral symptoms in this case point to a considerable degree of disturbance. The cephalic cry was typical. I regard the lack of speech as due to the general condition of unconsciousness rather than to aphasia from involvment of the speech centre. The symptoms were not those of aphasia, either ataxic or amnesic, and the inspection of the left ear showed that here the inflammation was just beginning and was probably of little importance in producing any of the symptoms. By paracentesis the blood vessels were depleted and free drainage established.

In treating so small a cavity as the tympanum it must not be forgotten that the space is very small. Two or three drops of pus may cause, by pressure, agonizing pain. And in the case just described the benefit of the depletion directly from the seat of disease was prompt and emphatic.

The second case furnishes a most instructive object lesson, interesting alike to the person who has a chronic suppuration of the ear and to the physician who has charge of such a case. I shall describe the facts of this case in the same order in which I learned them:

Case II.—A woman, single, age twenty-nine, had been working in a shoe factory regularly and worked during the forenoon of November 9, 1895. On the afternoon of this day she came to this city to visit friends. I first saw her at about 12.30 A.M., November 11th. (She was reported to have a chronic otitis). On the 9th she had had some nausea and vomiting and some pain in the left ear. This condition continued on the next day without particular attention being paid to it, but in the afternoon she was worse and it occurred to her friend that she was very sick, and that it was difficult to understand what she said. She was seen by a physician shortly after this and again in the evening when her condition was serious.

She was a well-nourished woman lying quietly in bed; lips very pale. When questioned she tried to answer but the speech was an unintelligible babble. The countenance was not intelligent. Temperature on preceding afternoon had been 104; now reduced to normal by phenacetin; pulse 80, and had been weak at times during past few hours.

A hasty inspection of the left ear showed some bloody pus and signs of active inflammation. Patient etherized. There was now seen near the end of the external meatus considerable macerated

epithelium which was wiped off with the cotton probe, also pus and blood. Membrana tympani intensely red but *not bulging*. A paracentesis was done in the posterior segment without altering the appearance of the membrane in any way. A small amount of blood, of course, followed the incision. A slender probe passed into the cavity of the tympanum came upon roughened bone near the fenestra ovalis. During the operation the pulse became poor, and it seemed unwise to attempt anything more. The patient recovered from the ether; but died about six or seven hours later.

As no autopsy could be secured in spite of our earnest efforts, I do not care to speculate upon the precise pathological conditions. The fact that a chronic suppuration existed enables one to picture the gradual encroachment of the disease upon the bony walls of the tympanum. It is, of course, impossible to say just where the eruption finally took place into the cranial cavity. As already suggested, the ways are numerous. At best the upper wall of the tympanic cavity, the tegmen tympani, is very thin, frequently of paper-like thinness; the bony wall of the aqueductus fallopii, enclosing the facial nerve, is no thicker, and the sheath of one of the vessels which enter the tympanum is always a possible means of transmission. Knapp has reported a case where the pus burrowed down the space in which is lodged the tensor tympani, and thence into the cranial cavity. Occasionally the bony septum between the middle ear and the carotid artery or the jugular vein is so thin that the slightest carious softening would perforate it. And there remains the lateral sinus, sometimes in close proximity to the tympanum. The labyrinth is, of course, only separated from the pus-producing cavity by the membrane of the fenestra rotunda.

The aphasia in this case is interesting. In the presence of well-marked aphasic symptoms, either amnesic or ataxic, there is encouragement to trephine and drain the abscess which may be supposed to occupy the appropriate centre. The diagnosis, however, between abscess and meningitis is obscure. It seems to the writer that the acuteness of the symptoms in this case, the high fever, and the fact that a chronic abscess could hardly have existed without causing some symptoms, make the diagnosis probably acute lepto meningitis. Particularly as the brain trouble so quickly followed the acute exacerbation of the long-continued tympanic suppuration. It would have been justifiable, however, to have trephined in this case, had it been seen before the condition became so serious. From the patient's sister later I learned that she had scarlet fever when about thirteen, and since that time, "more or less," earache, but never any severe pain. Frequently spoke of dizziness.

On November 6th (Wednesday) she was in good health. On November 7th some discharge of pus occurred in the night. On November 8th she was all right as the flow was more free, but at noon on the same day said she went home (from work) to syringe the ear. On the 9th spoke of dizziness and compared her head to a sawmill; and from this time on the progress of the disease has been described.

Case III.—A boy, age ten years, was referred to me October 5, 1895. There had been a suppurative discharge from the right ear for about three years. The pus was foul and occasionally bloody. No history of syphilis or tuberculosis.

A large polypoid mass was removed October 9th without particular trouble, and from that date careful antiseptic treatment carried out. I saw the patient about once in three days and always cleaned the ear thoroughly. I am confident that the details of the treatment were carefully observed. On November 9th he had so far improved that all home treatment was stopped. November 11th he was worse again and treatment resumed and kept up regularly but with little or no improvement. There was always a small amount of pus in the mouth of the Eustachian tube in spite of the most careful, local cleansing. On December 20th the membrana tympani seemed to be intact except for a small rounded perforation in the extreme anterior inferior quadrant. The boy could blow through the Eutachian tube and in this way force out a small amount of whitish pus. The drum membrane had of course lost its lustre and was retracted in its posterior segment. The walls of the meatus, next the drum membrane, partook of the general local condition. As the disease had shown no improvement for several days, and the condition of the drum membrane seemed to render any continuance of the similar treatment futile, the boy was etherized on December 20th and the malleus removed with the drum membrane in the usual manner, by cutting around the periphery of the membrane, cutting the tendon of the tensor tympani, the anterior and posterior ligaments of the malleus, severing some adhesions which had formed and the capsular ligament between the mallens and incus. A probe passed into the tympanum after the operation revealed roughened bone near the anterior surface of the promontory. The malleus was somewhat carious. The incus was not removed. Recovery from operation normal. During the next few days an abundant mass of granulations appeared in the middle ear, completely hiding the promontory. These were treated with solid nitrate of silver antiseptic applications used regularly, and the subsidence of

the disease during the next week was most gratifying. On January 1, 1896, there was a general improvement in the local condition, there being little pus, the granulations less abundant, and the promontory visible for the first time in several days. The general condition also markedly improved; the boy was brighter and heard better. On January 20th the ear was practically clean; dermatol, which had been blown in a week before, still remained dry. On March 23d his ear was reported dry and had been so since treatment was stopped. The hearing in this case could not be accurately tested, but the boy volunteered the information a few days after the operation, that he heard his teacher and the other boys better.

This case I have reported, not because it furnishes any remarkable phenomena, but because it shows what desirable results may be obtained in chronic suppurative disease of the middle ear, and because it forms an interesting supplement to Case II. And particularly do I report this because it is notorious that such diseases are often, very often, allowed to go untreated or treatment is relaxed after a few weeks have failed to effect a cure. A chronic suppuration of the middle ear is not a trivial, but a very serious disease. Where a carious process has become established, it is frequently steadily progressive to death. Of course the length of time before death depends upon the activity of the carious process and the direction it takes. The danger is appreciated by insurance companies, such persons not being acceptable risks. Cases II and III are similar; had Case II been treated earlier in life she would not have died of otitic brain disease. Had Case III been allowed to go without treatment he would have always had hanging over him the possibility of the same fatal termination. It will not do to say that death from this cause is so rare as to be of little practical importance. Between six-and seven-tenths per cent. of all deaths are due to otitic brain disease. This means a considerable number. It is too large to be ignored, particularly when we consider that most of the cases would be classed among the preventable diseases.

CLINICAL LECTURE.

DERMOID TUMORS.

By JOSEPH McFARLAND, M.D.,
OF PHILADELPHIA;
DEMONSTRATOR OF PATHOLOGICAL HISTOLOGY AND LECTURER ON BACTERIOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

Although in the early text-books of medicine and surgery occasional instances of the occurrence of dermoid tumors are mentioned, there seems to have been very little attention devoted to them until the time of Blumenbach (1785), who rejected the popular belief that they were punishments inflicted by God upon those who had been guilty of moral errors, and suggested that their formation was due to a definite *nisus formativus*. Baillie contributed information to the subject and refuted the old ideas by the discovery of an ovarian dermoid containing skin, hair, and bone in a little girl (a virgin) twelve years old. From this case Baillie was led to conclude that the genital organs of the human female were able in themselves, without fertilization, to generate and develop an embryo. A few years later Tumiati wrote upon dermoids, and regarded their formation as analogous to the double monsters. Still later, Meckel, in an interesting paper, concluded that these terratoma could originate from (1) conditions akin to pregnancy; (2) double monsters; and (3) the change of normal tissue into tissue of another kind in consequence of irritation. In 1854, Remak changed the views concerning these tumors by showing that they were congenital, and occurred at positions in which fetal clefts, fissures, or sinuses previously existed.

A dermoid tumor is one which contains mucous membrane, or skin. These tumors are generally cystic, and contain skin more often than mucous membrane, the skin being furnished with its various appendages. Although generally cystic, it is not unlikely that they originate as solid growths, and subsequently become cystic by the retention of sebaceous matter, the secretion of sweat glands, and the accumulation of exfoliated epithelium.

The skin, when present, does not cover the whole interior of the cyst, but, in the cases which I have examined, occurs in patches, more or less elevated, velvety in appearance, scattered upon the cyst walls. Beneath the skin not infrequently bone is present, occurring generally in flattened plates of irregular shape. Sometimes the bone is mandibular and contains sockets, from which teeth project through the epithelial covering into the cavity. The teeth are of various shapes; incisors, canines, and pre-molars occur. In the tumors which I have examined the teeth were without large roots, and resembled the milk teeth more than the permanent ones. Generally the teeth are well-formed and are white; sometimes they are deformed and discolored. The skin is generally furnished with an excessive number of sebaceous glands of large size. Sweat glands occur, but are less common. Typical hair follicles are often present, and bear hairs which are generally soft and downy but sometimes long and coarse. The hairs are nearly always blond. The hairs which occur in the tumors are always similar to those normal to the animal. In the negro, the hairs in the cyst are flattened and curly; in the sheep I have found small dermoids filled with soft wool; in the hog it is said that bristles occur, and Sutton states that the dermoids which occur in birds contain feathers. The skin patches are generally well supplied with villi, sometimes excessively so. Occasionally the skin covers smooth, rounded eminences suggesting mammary glands, and even provided with nipple-like projections. According to Sutton, these gland-like bodies are generally fatty in structure, but may be real mammary glands, provided with ducts passing through the nipple and secreting colustrum.

I have somewhere read, and am sorry that I cannot authenticate the statement with the reference, that nails and bones also occur in these cysts. The parts of the cyst-wall not covered with skin are generally covered by either squamous or columnar epithelium. The columnar epithelium is sometimes ciliated. In this epithelium, mucous glands may be present. The interior of the cyst is generally full of a mixed, smeary, granular material, which is made up of shed teeth, fallen or growing hair, epithelial cells and pearls, sebaceous matter, cholesterine and sweat.

We generally read about the epiblastic derivatives which occur in dermoids and give the tumors their name and it seems to be only within a recent period that it has been pointed out to us that the derivatives of the mesoblast and hypoblast are likewise represented. I have already pointed out that bone is present. Not infrequently cartilage is met with, not, however, as antecedent to bone, for the dermoid bones are generally membranous in origin. Striped and non-striated muscular tissues and much areolar tissue are also common, and are, of course, mesoblastic in origin. The hypoblast is probably represented by the columnar ciliated epithelium of the cyst and mucous glands which Wilms, to whose elaborate monograph I must refer later, regards as analogous to a reproductive tract, and as hypoblastic.

Cerebral tissue also occurs in dermoid tumors, especially in such as contain bone, and not infrequently scattered nerve cells resembling the motor nerve cells of the spinal cord, as well as nerve fibres, are found.

Before the time of Remak's paper, it was remarked that dermoid tumors occurred in the ovary and orbit with great frequency, but that certain parts of the body were seats of predilection does not seem to have been observed. Remak observed that they occurred by preference at positions in which the union of fetal clefts, fissures, or sinuses took place, and at which the skin could be included in the process of coalescence.

Continued observations upon the tumors has disclosed the fact that this is in great part true. We find them occurring in the great median fissures of the body, both anteriorly and posteriorly, in the mandibular fissure, orbital and naso-orbital fissure, bronchial clefts, in connection with the sutures of the brain case, and naso-pharynx. The fact, however, that they occur with great frequency in the ovary, occasionally in the testicle, and frequently in the abdominal and thoracic organs is opposed to the theory of Remak. Everyone knows that the ovary is the most frequent seat of occurrence. They have, however, been found in the pituitary body (Beck), in the olfactory bulb (Bonorden) in the esophagus (Hess), arch of the aorta (Stilling), lower lobe of the left lung (Cœlta), apex of the right lung (Salmonsen), and in the anterior surface of the heart (Pindus).

Meckel discovered a dermoid tumor of the diaphragm, from which twenty-one fragments of bone, four teeth, and considerable hair were removed. Ruysch found one in the omentum, Andral one in the mesentery, and Frankel one in the peritoneum. Bonfigli describes one which was adherent to the liver and stomach through an intermediate band; it contained teeth. Modelung described one from the kidney.

Clearly Remak's theory cannot be made to comprehend all these conditions. The only conclusion to which we can come is that it explains some, but not all cases, and that in consequence dermoid tumors may be several different, yet similar things. The old writers saw no difference between dermoid tumors and certain ectopic pregnancies, inasmuch as in them what were regarded as fetal elements were discovered. This led to the supposition that they were cases of imperfect conception, a theory which might readily apply to a tumor of the ovary, but could hardly be applicable to one of the orbit. The next supposition was that they were cases of *inclusio fetus in fetu*, and the next that they were analogous to the double monsters. It is probable that there is truth in all of these theories. Some of the tumors are certainly formed by the inclusion of fetal tissue during the arching-over processes of embryonal development. Tumors of this kind have been described as *sequestration dermoids*. They occur in the neighborhood of the fissures, which have already been pointed out. As the coalescence of the fetal parts is sometimes a little irregular, the tumors may not be situated exactly in the line of union, variation to one or the other side being rather common.

Similar tumors are formed by the persistence of fetal tubes, such as the thyro-lingual duct, the post-anal gut (as probably in the case just reported by Dr. Downes). These have been described as *tubulo-dermoids*. Both these forms are, of course, congenital, though the accumulation of materials in their interiors may not cause their size to be noticeable until late in life.

In classifying dermoid tumors, Sutton gives these two classes, then proceeds to describe those found in the ovary as *ovarian dermoids*. This arrangement makes his classification lack homogeniety, though it does not lessen its value. Indeed, how to approach the ovarian dermoids in any other manner than by placing them in a separate class is a question.

Ovarian dermoids are very common. Olshausen found that of 2275 ovarian tumors 80, *i.e.*, 4 per cent., were dermoids. They are more common on the right side than on the left. Mantel observed 191 cases, and found that 97 were on the right side, 67 on the left side, and 26 double-sided.

It is generally supposed that the embryonal cells of the developing fetus are in some manner "included" in the ovarian tissue, where they remain latent for a varying period, then take on a rapid development, with the production of tissues of the epiblastic type in irregular masses, *i.e.*, dermoid tumors. To me it is very difficult to understand just how these embryonal cells could be included in the ovarian tissue, and much more difficult to understand how they could remain latent for a period—as has really happened—of seventy years. Wilms doubts the congenital nature of the tumors, and in speaking of the theory under discussion, says that it serves to complicate matters, rather than to elucidate them.

If the tumors are not congenital, they must, of course, be developed in after life, and we must look in the tissues

in which they occur for the cells from which they can originate. Sutton suggests that the epithelial cells of the membrano granulosum are endowed with great vitality, and may be those whose energies are responsible for the development of the tumors and their contents. Wilms is, however, of a different opinion, and sees in the ovum itself a cell capable, when fertilized, of producing tissues of all kinds. For the elaboration of his theory, he brings forward the developmental cycle of the ovum itself, and calls particular attention to the extension of the polar granule. This is by embryologists regarded as a kind of male element in the female cell, which must be extended before the ovum can be ready for fertilization. If the powers of extrusion miscarries, and this granule remains within the ovum, Wilms sees no reason why parthenogenesis cannot take place, and an atypical and monstrous development of the ovum result with the production of a dermoid tumor instead of a fetus. Wilms supports his view by observations upon nineteen cases of ovarian dermoid tumors, which were subjected to a careful microscopic study. In each of them tissue derivatives of all three layers of the embryo were found—skin with hair, subaceous glands, sweat glands, and teeth, representing the epiblast; blood vessels, striped and unstriped muscle, and bone representing the mesoblast; and columnar ciliated epithelium in a rudimentary tube or sac, supposed to be analogous to the genitalia representing the hypoblast. So satisfied is Wilms that the ovarian dermoids originate in this way that he suggests abandoning the term dermoid, with the misconceptions attached to it, and using the term "rudimentary ovarian parasite" instead.

However, if the theory of Wilms be able to support itself against the currently accepted theories or not, it will only suffice to explain the ovarian tumors, and leaves us still in doubt concerning similar tumors in the lung, liver, kidney, and other internal organs. Unless these be congenital cases of *inclusio fetus in fetu*, or of inclusion of misplaced embryonal tissue in the developing organism, I am at a loss to account for them, and have no new theory to advance.

Dermoid tumors are benign in nature, as a rule, although their growth in some locations is accompanied by pain. A few rare cases are on record in which the epithelium in the tumors took on a carcinomatous development. The combination of dermoid and adenoma also occurs. Although benign, one case of seeming metastasis is reported by Emanuel, who observed the development of a dermoid tumor in the rectus muscle after removal of an ovarian dermoid.

Kollaczek has also reported a most extraordinary case of richly disseminated epithelial clumps over the entire peritoneum. In the centre of each nodule a hair was visible. Frankel has also seen a similar case.

The rupture of an ovarian dermoid, and of other dermoids, is always a serious matter, because of the irritating foreign matter which escapes into the peritoneum, and because of the danger of the occurrence of disseminated tumors as a result.

The diagnosis of the dermoid tumors is not always possible before removal, and sometimes difficult afterward, especially if hair, teeth, bone, and other easily recognized characteristics are absent. The contents of the cyst are partly characteristic, for scarcely any other lesion furnishes the smeary, turbid material which can be evacuated from a dermoid tumor. Examination of the cyst-wall by the microscope generally makes the condition plain by revealing epithelium and its appendages.

At times one of the most difficult determinations to make is the separation of the dermoid tumors and ectopic pregnancies. Wilms points out that this should offer few difficulties to the microscope, because of the invariable presence in the ectopics, and invariable absence in the dermoids, of placental or decidual tissues.

CLINICAL MEMORANDA.

A CASE OF GUNSHOT WOUND OF THE INTESTINE—RECOVERY WITHOUT OPERATION.

By J. P. TILLERY, M.D.,
of Coal Creek, Tenn.

July 30, 1893, I was called to see Effie L., aged six years, who was suffering from a gunshot wound inflicted by a 32-calibre Winchester rifle in the hands of her little brother. The bullet entered about 1½ in. to the right of the spine, on a level with the first or second lumbar vertebræ, and came out at the lower border of the left lung, in the axillary line.

Her home was two miles in the country and I arrived one hour after the accident. I found her suffering exquisite pain in the lower extremites. Stimulants were at once given to counteract shock, and an opiate to control the pain. I then ligated with a No. 12 silk ligature a piece of lung tissue 1¼ in. in length, which was protruding from the wound of exit, making slight traction to withdraw it sufficiently to avoid any infection from extraneous causes. Then, with a strip of iodoform gauze over the end of grooved director, I replaced the stump, leaving the gauze for capillary drainage. I then dressed the wound with gauze and cotton, throwing a broad bandage around the body to retain the dressing, and awaited developments. On the morning of the second day the temperature was 99⅗, and the dressing, being soiled, was changed and a fresh piece of gauze inserted in the wound. The child still complained of pain in the lower extremities, with very limited motion, which was due, I think, to concussion of the cord; the ball, in my judgment, having struck the body of the vertebra. Her symptoms were uneventful until the morning of the fourth day. When the dressing was changed it was found that the ligature had come off the stump, and, with the drainage gauze, was found in the dressing, and protruding from the wound to the extent of an inch was an intestinal worm (Lumbricoid). Taking hold of this unwelcome visitor I removed it, and found it to be about five inches in length. This was the first indication of injury to the bowels, there having been no indication of peritonitis. However, there had been some tympanitis from the second day.

The seriousness of the case was at once announced to the family and the possibility of an operation suggested. Dr. L. Jones Price of Knoxville, was called in consulta-

tion, and there still being no indications of peritonitis fourteen hours after discovering the worm, we decided to still await developments.

The wound was kept open until the eighth day, when it was found impossible to introduce the gauze. Her temperature was now normal and her recovery assured. The pain gradually subsiding in the lower limbs, after about six weeks she was able to walk, and up to this time has had no further trouble.

The question naturally arises in my mind as to what part of the intestinal canal was injured, and why did she escape peritonitis?

DR. GIBNEY'S METHOD OF TREATING SPRAINED ANKLE, WITH REPORT OF SEVEN CASES,[1]

By F. D. REESE, M.D.,
of Cortland, N. Y.

While persuing the pages of the *New York Medical Journal* of February 16, 1895, I came across an article entitled: "Sprained Ankle—A Treatment that Requires no Loss of Time; Requires no Crutches, and is Not Attended with any Impairment of Function."

The article was written by Dr. Gibney of New York. This method of treatment of sprained ankle, with rubber adhesive plaster, I have called by his name, although he claims no priority, but says Dr. Cotterell of London, used a similar process.

For a sprain about the external malleolus, take a roll of the best rubber adhesive plaster, about 1 inch wide. Begin at the outer border of foot, near the little toe, and carry it around the heel to a corresponding point on the inside of the foot. The next strip is applied vertically, and begins at the juncture of the lower and middle third of leg, and passes down along the tendo-Achillis around the heel and up the leg to a point opposite the place of beginning. The rest of the strips are applied in the same manner as these two, overlapping each other about one-third, until the ankle and instep are all covered, except one inch in the median line. This is left to guard against any possibility of cutting off the circulation.

Dr. Gibney says: "If the sprain involves the tarsal joint itself, or mid-tarsal joint, straps should be applied as follows: The first one begins on the inner side of the heel, passes back of the heel, below the external malleolus, over the dorsum of the foot, and terminates just below the ball of the great toe. The second one is started just under the external malleolus, passes back of the heel, over front of the foot, and terminates just under the outer side of the foot, near the small toe;" but this I would hardly deem necessary if the straps are applied as described, bringing the ends of the plaster within one inch of each other.

You can readily see that these strips of plaster become a closely interwoven and tight-fitting splint, that restricts motion, sustains the injured ligaments, and tendons, and prevents effusion. This treatment impressed me as being the ideal one, and I resolved to give it a practical test.

[1] Read before the Cortland County Medical Society, March 12, 1896.

The history of seven cases which have been treated by this method are presented, after which I leave it with the reader to decide whether the results from Dr. Gibney's method of treatment of sprained ankle justify the title of his article.

Case I.—Charles R., aged twenty; sprained his right ankle as the result of a misstep while working in the woods, December, 1894. He had recovered from the more acute symptoms and pain when he came to my office, March 13, 1895, but could not then step squarely on his foot, and was compelled to support himself with two canes. Examining the ankle I found a subacute inflammation and tenderness on pressure around the external malleolus, and over the tarsal bones. Adduction and flexion of the foot cause more or less pain, and he said (which was evident) that he was unable to do his work. I applied the straps as described, and he was able, immediately, to abandon the canes, and walked with but a slight hitch in his gait. He was directed to wear the straps until they came off, if they continued to afford relief. Some months later he said he wore the straps for six weeks, and, that as far as he could see, he had made a perfect recovery.

Case II.—Mrs. L., aged thirty-six, fell from her bicycle and sprained her left ankle, April 20, 1895. I saw her at her home the same afternoon. Around the external malleolus and over tarsal bones, the tissues were swollen, and there was extravasation of blood. Motion was limited and pain extreme. I applied the straps, and she was able to take a few steps around the room. Some weeks later she reported that she had suffered a good deal of pain for about a week, after which she gained rapidly and was well at the end of three weeks.

Case III.—Mr. R., minister, aged fifty, slipped and sprained his left ankle June 26, 1895. His wife applied hot fomentations until the day following, when I was called to see him. I found him in bed and he declared to me, "It is a physical impossibility to walk." The tissues were slightly swollen, around and under the external malleolus, with some ecchymosis. There was great tenderness upon pressure, and limited motion. Applied the straps and patient was able to walk around the room with ease. The day following, he walked to a near neighbor's. This was on Wednesday, and the following Sunday, he walked twice to church and preached at both services. July 3d, changed the straps. There was some tenderness, and tissues were black and blue. On July 16th, discharged the patient.

Case IV.—Mr. S., aged sixty-five, broommaker, came to my office on crutches, June 27, 1895, and gave the following history:

Fell off the porch, eight weeks before, and sprained, as he supposed, his left ankle. On examination I found he had not only sprained the ankle, but had fractured the fibula, low down. I applied the straps, which gave him a great deal of comfort as far as the ankle was concerned. Reapplied the straps July 13th, when there was less swelling, and the callous at the break was more easily felt. He was able to walk with one cane; from this time his recovery was uninterrupted.

Case V.—Mr. B., aged thirty-three, came to my office

on crutches. June 28, 1895, suffering from a sprain of left ankle, which occurred two days previous. The ankle was badly swollen around external malleolus, and instep ecchymotic. Manipulation caused pain, and the foot was restricted in its movement. Applied the straps, which gave immediately relief, and he was able to step on the foot. Reapplied straps July 2d, and discharged the case, well, July 19th.

Case VI.—Mr. H., aged thirty-one, slipped and sprained his right ankle, August 19, 1895. He called at my office the 20th, was then suffering great pain during locomotion. Found the ankle swollen about external malleolus, but no extravasation of blood. Applied the straps and the patient experienced immediate relief. He lost no time, but worked at his trade, which was that of molder. August 27th, I discharged the patient, but he was to wear the straps a few days longer.

Case VII.—Miss K., aged twenty-four, was brought to my office July 17, 1895. History as follows: She had fallen and sprained the right ankle and tarsal joints. She could not step on the foot, and suffered a great deal of pain from it. The movements of abduction, flexion and extension were restricted. The tissues were slightly swollen over these joints. Applied the straps, but she was unable to stand. (I think this was in part due to fear.) She was greatly relieved of pain. July 22d, five days after, she removed the dressing, at the suggestion of a friend, believing the parts should be bathed. July 23d, she suffered so much pain that she sent for me, and I reapplied the straps, which gave her instant relief. Her recovery was uninterrupted and she returned to her work, fourteen days after the first application of the straps.

MEDICAL PROGRESS.

A Sympathetic Ganglion in the Human Ovary.—As the result of an histologic study Winterhalter (*Archiv für Gynækologie*, B. LI, H. 1, p. 49) has succeeded in finding in the zona vasculosa of the human ovary ganglion-cells of roundish or polygonal form, without demonstrable nuclei, provided with numerous short and long, thick, and simple processes, consisting of a single medullated nerve-fibre, corresponding in all other respects to the non-medullated fibres found in the ovary. The cell-processes vary in number, and may arise from the entire circumference of the cell, from only one side or from opposite sides; they vary in thickness individually, some continuing without change in calibre, others growing thinner as they proceed and finally breaking up into several fibres; some surround the blood-vessels concentrically. The cells lying in the vascular layer close to the large nerve-trunks send processes to and receive others from these trunks. The processes of all of the ganglion-cells terminate within the zona vasculosa; none could be traced into the follicular layer, but it is not impossible that they enter this layer with the blood-vessels, as many fibres, whose continuation could not be followed, accompanied the vessels. No ganglion-cells could be found in the follicular layer. The hypothesis is proposed that the irritation of the ripening follicle is conveyed to the surrounding nerve-fibres to the processes of the ganglion-cells in the vascular layer, wherein it accumulates until it reaches sufficient intensity to give rise through other nerve-processes to a motor impulse, resulting in the vascular changes characteristic of menstruation.

The Sterilization of Catgut.—At a recent meeting of the Berlin Medical Society Saul (*Wiener klinische Rundschau*, 1896, No. 9, p. 154) described a method of sterilizing catgut by means of boiling alcohol, that he has found efficacious and satisfactory. A combination of alcohol 80 parts, carbolic acid 5 parts, and water 15 parts, effected the purpose best. Hofmeister (*Centralblatt für Chirurgie*, 1896, No. 9, p. 193) has employed the method of Saul, but failed to secure satisfactory results. His own method consists in first hardening the crude catgut, wound upon rolls, by immersion for twenty-four hours in a four per cent. solution of formalin; then boiling in water for ten minutes, and subsequent hardening and preservation in alcohol, to which have been added five per cent. of glycerin and one-tenth per cent. of mercuric chlorid.

THERAPEUTIC NOTES.

Quinine-Intoxication.—Murri (*Deutsche medicinische Wochenschrift*, 1896, Nos. 8, 9) reports the case of a girl, nineteen years old, who was seized with malarial fever which apparently yielded to treatment with quinine, but recurred. The paroxysms were repeated at irregular intervals, and from time to time quinine was taken. On one occasion an attack followed shortly after a dose of quinine, but the chill was more pronounced; vomiting also occurred; the urine presented an unusual dark-brown color, and on the following day the skin was discolored yellow. Matters thus continued for several months, the administration of even 7½ grains of quinine giving rise to toxic symptoms. On examination the spleen was found to be enlarged and hard. During a febrile paroxysm the urine contained peptone, serum-albumin, globulin, hemoglobulin, and urobilin, but no biliary pigment. Microscopic examination disclosed the presence of hyaline tube casts, renal epithelium, and lucocytes. Repeated examination of the blood showed a slight diminution in the number of red blood corpuscles, but no malarial parasites at any time. After the paroxysm urobilin and bilirubin were found in the blood. It was noted that the attack was repeated after the patient had eaten, and the digestive functions were deranged. In later attacks the liver was also observed to be enlarged. Under treatment with iron and rest in bed, the condition of the patient greatly improved. To confirm the opinion formed as to the relation of some of the attacks to the administration of quinine, this drug was on a number of occasions given, with the result of inducing nausea, vomiting, epigastric pain, and tenderness, a sense of coldness, redness of the face, hyperemia of the conjunctivæ, cephalalgia, elevation of temperature, acceleration of pulse and respiration, increased size of the spleen, tenderness over the liver, and changes in the urine and in the blood. The patient ultimately recovered her previous state of health, although it was possible, with the precision of a laboratory experiment, to reproduce the symptoms from which she had long suffered.

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SATURDAY, APRIL 18, 1896.

THE AMERICAN ACADEMY OF MEDICINE, AND MEDICAL TEACHING.

The American Academy of Medicine will hold its next meeting in Atlanta, Ga., May 2d and 4th. The influence of this organization is far-reaching and powerful. And since it has turned its attention from the theoretical subjects, which engrossed its deliberations in its earlier history, to the vital practical problems of the day, the value of its work cannot be overestimated. The wisdom of concentrating all the business of each meeting upon one important economic subject is apparent. Last year the subject of discussion was the Hospital and Dispensary Abuse and the wide problems envolved in the general relation of the profession and the community to the dependent classes. The accumulated statistics then presented, and the abuses there ventilated, have permeated thought and given direction to reformatory measures that will gradually work out, it is believed, the practical solution of these difficulties. At the meeting next month the question for discussion is one of great and vital importance. The program embodies a discussion, by prominent medical teachers from all sections of the country, upon Methods of Medical Teaching.

Probably no subject connected with the profession demands a more thorough shaking up than this. It is full of the dry bones of tradition and custom, whose origin dates from the dark ages, when books were unknown and knowledge passed only by word of mouth. The field of knowledge was limited, and the means for personal investigation did not exist. Now the field is boundless, and the authorities and instruments for personal investigation are in every student's hands.

Formerly the memory was about the only faculty that was cultivated. And the isolated facts that were crammed into the student's mind and held, as it were, by brute force of memory is wearisome to recall.

Memory has its place and it is an important one. The power to grasp and comprehend facts, however, is the foundation of all knowledge. To retain them in the mind is important. But the faculty of utilizing those facts, of putting two and two together, and reaching the logical conclusion is the distinctive attribute of the human mind. In the processes of acquiring a medical education these faculties of the mind—the perception and the reason—can be disciplined and developed as well as in the pursuit of the academic degree and should receive vastly more attention.

This is the great principle that underlies all education. It is candidly and frankly recognized by medical teachers, but how it can be applied in our medical schools, to all the detail of the various branches, is the problem which our leaders of thought must work out to a practical conclusion. This is the question upon which we are looking to the deliberations of the Academy to shed a flood of light.

IMMORAL INFECTION IN HOSPITAL WARDS.

Medicine is such an engrossing profession, that the physician is apt to overlook many matters and many opportunities which lie just outside his routine work, but which cross his path daily. We question seriously the propriety of the physician arrogating to himself the duties of the clergyman, as some well-meaning persons believe he should, yet no conscientious practitioner can be oblivious to the fact that his indirect influence for good or evil is tremendous. We wish, at present, to call

attention to only one phase of this moral obligation in connection with hospital service.

Passing through the female wards of almost any hospital, one will see a plentiful representation of prostitutes, from the blear-eyed hag, in whom the ravages of alcohol and syphilis have obliterated all that is attractive and womanly, to the girl just entering on a career of shame, who has learned the art of making the best of each grace and charm without having, as yet, acquired a repulsive boldness. Some of these women are plainly in need of medical aid, suffering from venereal disease, from various pelvic disorders, afflicted with some general disease, or awaiting confinement. Others, again, show no more evidence of serious illness than do the occupants of some of the private rooms, who spend their lives in the pursuit of relief from ailments due to imagination and idleness. Why is it that a certain class of quasi-invalid prostitutes seek the hospital? Partly because—comparatively few of the women to whom we refer being city charges—a reasonable board rate affords medical attendance and nursing, with many little luxuries and an opportunity for rest and idleness; partly because houses of prostitution recruit their forces, to a large extent, from the innocent but frivolous and shallow girls to be found in public hospitals. Such girls look forward to the return of health with anxiety rather than pleasure. Discharge from the hospital means, to them, to be thrown out into the world without money, often without proper clothing, usually without assurance of work. What wonder that such girls are flattered by the attention of prostitutes, whose soft hands, jewels, fine attire, and imitation of good breeding, all suggest to the ignorant that they belong to a real lady? What wonder that too many follow the line of least resistance, away from a life of toil to the physical comforts and idleness of the brothel?

The evil to which we have referred is as real as though it was caused by a germ, its suffering is as great as though it were felt in physical centres rather than by the mind. Leaving aside the strictly religious and moral aspect of the question, it is as much the duty of a physician to prevent the misery entailed by a life of prostitution as to adopt sanitary measures against the spread of scarlet fever or diphtheria through the hospital. And, to complete the analogy, prophylaxis must be along the same line—isolation of the infected ones, so that they may not contaminate others by their effluvia.

GENERAL SURGERY.

A CRITICAL RESUME OF RECENT PROGRESS IN CEREBRAL SURGERY.

The discussion on cerebral surgery at the recent meeting of the New York State Society does not offer much encouragement to the enthusiast in this branch of surgery. The conclusions reached must be of value, as they expressed the deliberate opinion of several prominent neurologists who have had a large experience in this class of cases. It cannot be truthfully charged that surgeons have ever been overenthusiastic about operations on the brain. Ten years ago it was expected that the advances in cerebral localization would open up an avenue for successful surgical interference on many cases of cerebral disease. It must be acknowledged, however, that this expectation has not been realized. It is perhaps as well that the views of the neurologists referred to, were somewhat discouraging, for it will tend to limit operative interference in questionable cases, and the inference must naturally be drawn that in the future, cases for cranial operation, especially when for the cure of epilepsy, will be more carefully selected than has been the custom during the past few years. The difficulties in the way of correct diagnosis ought to stimulate the diagnostician to a more careful observation, and a more accurate classification of the characteristic symptoms of every case, so that he may be able to reach a reasonably certain decision as to the possibility of relief by means of operation. At the present time it certainly appears as if but a small percentage of patients, who suffer from cerebral disease, can be relieved by surgical interference. The most favorable results have been obtained in abscesses, due to ear disease, and in sinus thromboses. It is true that some brilliant cures have followed operations for tumors, or for the relief of Jacksonian epilepsy when due to traumatism, but such results are exceptional. Reports of cases both of failure and of success, are slowly accumulating, and as the number increases, the prognosis of such operations must at least become more

accurate, if not more favorable. In a department of surgery where the cases can be counted by the score only, instead of by the thousand, as in some specialties, the history of even a single case must be of interest, and often of great value.

The uncertainty of diagnosis is only one reason why results are apt to be unsatisfactory. There are three more potent reasons: first, the character of the lesion; second, its inaccessibility; and third, the impossibility of its removal without the substitution in its place of other lesions of equal or greater severity, Many cerebral tumors are either malignant or tubercular. The difficulties attending the removal of cancer in other regions, apply with still greater force to cerebral growths of this character. The same difficulties, though to a less degree, apply to operations on tubercular tumors. Since the appearance, in 1889, of Bergmann's monograph on tubercular tumors of the brain, operation upon these growths, has not been regarded with much favor, by either neurologists or surgeons. His objections to surgical interference in this class of cases were, first, that following the operation, there was apt to be extension of the tubercular process to the coverings of the brain, resulting in a fatal tubercular meningitis, and second, that removal of the growth was apt to be incomplete, and that recurrence was almost certain and generally rapid. Recent experiences have, however, somewhat modified this unfavorable view. A number of apparent cures have resulted. In a recent article by Krönlein, fifteen cases of operation are reported. Four of these patients were permanently cured, and two were temporarily improved. The mortality was great, seven having died as the result of the operation, though in four of these, the tumor had not been found by the surgeon. It must be granted that there are cases of cerebral tuberculosis which should be subjected to operative interference. They are, however, exceptional, as either general tubercular infection or advanced disease of any other single organ must contra-indicate operation. The same is true of malignant growths. A few successful cases have been reported, but we cannot expect much progress to be made in this direction. Often, however, the nature of the tumor cannot be known and if from the symptoms it can be judged that there is a probability of its removal by operation, an exploratory opening in the skull is certainly justifiable. The danger of this procedure is slight, and a benign tumor may be exposed.

The inaccessibility of the growth will always prove a great barrier to the successful removal of brain tumors. Tumors at the base of the brain or buried deeply beneath the cortex, will always defy the operator. The damage which necessarily must be done to the cerebral tissue in order to reach them, is the factor that nullifies the operation.

A very complete account of all operations for tumors of the brain has been made by Starr. Up to 1896, he has collected 162 cases. In 48, the tumor was not found by the operator. In 7 cases it was found, but could not be removed. In 107 cases the tumor was found and removed; 72 of these patients recovered, and 35 died. Considering the hopeless nature of such cases, this mortality is certainly not excessive.

The results of operation for the cure of epilepsy have been very disappointing. In comparatively few cases is resort to surgery justifiable. It is exceptional that autopsy on such cases reveals any gross lesion within the cranium. And a favorable result is to be expected in such cases only where there is a visible lesion, so situated that it can be easily reached and safely removed. The most favorable results are to be expected in cases where there is an irritative lesion pressing on the cortex of the brain. If there is a reasonable chance that such a lesion exists, operation is demanded. For example, when the convulsions follow a traumatism, the irritant being a depression of bone, a thickened dura, an organized blood clot, a cyst, or an abscess, the chances of cure are good, provided that years have not elapsed between the time of injury and of operation. In cases of Jacksonian epilepsy without a traumatic history, the outlook is less favorable. In many of these, the lesion is one that cannot be removed by operation.

The excision of that part of the cortex which governs the affected muscles but rarely gives permanent relief. In its place there forms a cicatrix which remains as a source of irritation; indeed, after many cerebral operations, this cicatricial tissue will prevent a permanent cure. The

new tissue may not at first act as an irritant, and on this account many of the reports of "cure by operation" are valueless, inasmuch as sufficient time has not elapsed after the operation to fairly decide whether or not a cure has been effected. No definite conclusion can be drawn until a year at least has elapsed. It must not be overlooked, however, that in certain cases where radical operation is impossible it is justifiable to make an opening in the skull for the relief of intra-cranial pressure. Such a safety valve will often temporarily relieve the symptoms, and may even permanently mitigate the violence of future attacks.

The operative technic of cranial surgery varies somewhat, according to the training, mechanical skill, and experience of the surgeon. On one point all are agreed, *i.e.*, the vital importance of strict asepsis or antisepsis. Various methods are employed for exposing the interior of the cranium. The older method, according to which one or more buttons of bone are removed by the trephine and the opening enlarged by the *rongeur* bone forceps is still frequently employed. If a large opening is required it can be made with greater rapidity, according to Horsley's method, by means of the ordinary amputating saw and his massive bone forceps. The employment of either of these methods, however, prevents the replacement of the bone. If it is considered undesirable to leave a permanent gap in the skull—and this opinion is entertained by the majority of surgeons—the flap method must be employed. The curved incision in the bone can be made by either the chisel or a saw worked by an electro-motor and, the base being broken, a window of the desired size is made, through which the necessary inspection and manipulations can be accomplished, after which the flap is replaced. If chisels are used, hard blows must not be struck by the mallet, as serious results have been attributed to its impact. Cases have been reported where considerable shock to the respiratory and circulatory centres has been thus produced, and where subdural hemorrhages have resulted. If the saw be employed this concussion is avoided, and the section is more rapidly made, but in spite of every precaution the best saws will occasionally fail at the most critical moment, and there is also the disadvantage that it is difficult to perfectly control its movements and hence injury to the dura and brain is apt to occur. Until recently, the saws employed have been very thin, so that it has been almost impossible to see the bottom of their groove and to ascertain what depth has been reached. The blades are now made thicker, and this improvement ought to lessen the risk to the brain and its membranes. In spite, however, of many ingenious devices of this nature, the use of the saw or burr is not altogether satisfactory. If one or other is to be employed, it is probably wiser to make with it a partial section only of the skull, and complete it with light blows of the chisel. A new instrument, combining saw and forceps, has recently been devised by Dahlgren of Upsala. He claims that he can cut out a large flap in *four* minutes. It is frequently found, however, that instruments will perform such perfect work in the hands of their inventors only, and the description of these forceps would not incline one to believe in the rapidity of action claimed by its originator. Horsley, whose experience is very large and whose rotating saw is one of the best, has abandoned its use and disapproves of the flap operation, as he see no special disadvantage in leaving a permanent opening in the skull. It is certain, indeed, that patients who have large openings in their skulls suffer no inconvenience from the bony defect; still it seems wiser to restore the continuity of the cranial vault, provided this can be accomplished without subjecting the patient to additional risk. The popularity of the flap operation is increasing, but as yet, there are imperfections in the technic of this method. A larger experience is needed before it can be definitely decided which of the two plans gives the most satisfactory results.

Andrew J. McCosh, M.D.

ECHOES AND NEWS.

The third of the series of Cartwright Lectures of the College of Physicians and Surgeons (Medical Department of Columbia University, New York) will be given in the hall of the Academy of Medicine, No. 17 West Forty-third street, New York, on Wednesday, 22d, at 8.15 P.M., by George S. Huntington, A.M., M.D., Professor of Anatomy in Columbia University. Third lecture: "Morphology of the Bronchial System and its Relation to the Pulmonary Vascular Supply in Mammalia."

It is with pleasure we learn through an English exchange that "a sum of £2300 has been received by the Huxley Memorial General Committee. This will be sufficent for the erection of the statue of the great scientist in the Natural History Museum, and for the establishment of a medal at the Royal College of Science."

Dr. Francis J. Quinlan has been appointed laryngologist and rhinologist to St. Vincent's Hospital, in New York City.

The sale of cigarettes or material for making them is now prohibited in the State of Iowa by an act of its late legislature.

It is reported that measles have invaded the White House, and that at least one of the President's little daughters is suffering from this disease.

One of the New York theatres is shortly to produce an American comedy under the title of "A Fashionable Physician."

New possibilities in the use of the Röntgen rays have been discovered by Dr. Frenzel of Berlin. Twelve sheets of bromide of silver paper laid one upon the other were placed in the holder and the skiagraph of a frog taken. The image was equally well defined on each sheet.

Leprosy has broken out in the Russian Baltic provinces with something of the virulence it possessed in the Middle Ages. Several hundred persons are said to be afflicted with the disease, and the Livonian Diet has just taken measures for isolating them at the cost of the state.

The health officers of the western cities evidently do not hold the virtues of "Divine Healer" Schrader in very high esteem. He was banished from Cincinnati, arrested in Newport, and when last heard from, other places were waving him off with inhospitable gestures.

The lay press has recently suggested, with more good judgment than is usual with them when discussing medical matters, the use of cold water and massage for congestive headaches. In deference to a time-honored respect for prophylactic methods, we beg to amend the above by suggesting that a strict adherence to cold water internally may render the massage unnecessary.

Under the administration of the newly enacted law in New York, known as the Raines bill, the druggists are exceedingly cautious in dispensing liquor, even upon a physician's prescription, unless his standing is known to them. It is also probable that the products of the soda fountains will be less contaminated with alcoholics in future.

A portable crematory for military purposes has been invented by a Polish engineer. It has the appearance of the army baking oven, but is much higher and heavier, and is drawn by eight horses. It is intended for the disposal of the bodies of soldiers killed in battle, so as to avoid the danger of epidemics from the burial of great numbers of men. Each German army corps, it is said, will be equipped with one.

The National House of Representatives has passed a bill taxing the manufacture and sale of an article of diet known as "filled cheese." This is said to be a cheap, but not unwholesome, substitute for ordinary cream cheese, and is made from skimmed milk and lard oil.

Dr. Alvah H. Doty, health officer of the Port of New York, has just returned from a trip through Mexico, and a visit to Havana. In the latter place, he found very unsanitary conditions existing, and saw a moderate number of cases of yellow fever. From present indications he expects these to increase as the season advances, and as a matter of precaution, all passengers who do not bring a certificate from Dr. Burgess, the U. S. Marine Hospital Inspector, residing in that city, will be held after May 1st at the New York quarantine station, until five days have elapsed after their departure from Cuba.

A bill before the National House of Representatives, providing for the adoption of the metric system of weights and measures in the various departments of the United States Government, was passed last week, but later reconsidered and finally referred back to a committee. It is said that the intelligent members of the House strongly favor the measure, and there is little doubt of its final adoption.

A dozen or more of Cincinnati's most eminent physicians and surgeons have inaugurated a movement for establishing a "Doctors' Headquarters." The offices of the promotors will be located therein, and a telephone on every floor, connecting with each office, serves the purpose of all. The prime object of the plan is to provide means whereby an urgent call may receive immediate attention.

The New Orleans *Med. and Surg. Journal* for April, after commenting upon the recent editorial in the Medical News discussing the care of leprosy in New York, and the country generally, says: "The State of Louisiana has attempted legislation in the matter, and the efforts at segregation are being watched with much interest. We have much to do at home in the matter, before the wheels of a national government can be even got ready to move. The medical profession of the State should make the effort, before enforced Federal legislation shows us how to do it."

At the Am Urban Hospital in Berlin 411 diphtheria patients were treated in 1894–95, 255 of whom were discharged cured. Of 245 treated with serum, 28 per cent. died, while among the 146 who were treated otherwise the mortality was 42 per cent.; 53.2 of the serum cases were serious, 23.7 severe, and the rest slight. No evil effects were observed to follow the use of the serum, and its effectiveness was proportionate to the earliness of its application and the strength of the first doses. The hospital authorities infer from this that it is not an infallible, but a highly valuable remedy.

The celebrated Professor Langerhaus, Medical Director of the Moabit Hospital, startled Berlin by causing the following announcement to be published in the papers: "Our darling Ernest, in perfect health, aged twenty-one months,

died suddenly in consequence of an injection of Dr. Behring's diphtheria serum." Immediately after the death of his son, Professor Langerhaus sealed the vial containing the serum used in giving the alleged fatal injection, that it might be examined by the local authorities.

The professor states that his son was in normal health, and was inoculated with the serum merely as a precaution, a housemaid in the family having diphtheria, and he having lost two children in 1895 from the same disease. The autopsy held by the public authorities upon the body of the infant left the charge that he was poisoned by an injection of Dr. Behring's diphtheria serum unproved.

Attention is directed in the current number of *The Practitioner* (London), to the decadence in the medical department of the British army, due to a lack of attraction in the service. Evidently much the same conditions exist as those to which we recently called attention in the medical corps of the U. S. Navy. Unless the present reluctance on the part of both nations to recognize the real worth and dignity of the medical staffs by promotion to rank and pay in better accord with the qualifications demanded, a manifest weakness, if not a fatal palsy, in this important arm of the service must inevitably follow.

It has been determined by experiment that the typhoid bacilli will exist in oysters for at least a month after infection, and probably actually multiply both in the body and juice of this popular article of diet.

A recent report made and signed by the superintendents of six London hospitals upon the use of antitoxin in 2182 cases of diphtheria contains the following conclusions: (1) "A great reduction in the mortality of cases brought under treatment on the first and second day of illness. (2) The lowering of the combined general mortality to a point below that of any former year. (3) The still more remarkable reduction in the mortality of the laryngeal cases. (4) The uniform improvement in the results of tracheotomy at each separate hospital. (5) The beneficial effects produced on the clinical course of the disease."

Professor Haffine has returned to India, and will continue his anti-cholera inoculations. At the suggestion of the India Tea Association, the coolies at Calcutta, who enlist for work in the gardens, will be subjected to his method.

The Royal Commission on Vaccination of Great Britain is holding weekly meetings at present, with a hope of drawing up and presenting to Parliament during its present session a final report including evidences obtained from the present outbreak of smallpox at Gloucester. Dr. Sidney Coupland has been commissioned by it to visit Gloucester and report upon the epidemic and its causes.

The U. S. Navy Department at Washington received last week a statement from a naval surgeon on duty at Hong Kong, China, that the black plague had broken out at that port, but for commercial reasons the municipal government endeavored to keep the fact secret. Orders have been given to guard against importation of the disease at San Francisco. This acute infectious disease, if we may judge from historical accounts of its first invasions of Europe in 1347, and again in 1665, is a veritable "Angel of Death" sparing neither bird, beast, nor man. During the former epidemic, Venice alone lost 100,000, or seven-tenths of her population; in Genoa scarcely one-seventh of the inhabitants survived. As a result of the last visitation in London there remain to this day many mementos of the plague in the shape of green plots in the centre of the most populated districts, marking the spots where thousands of corpses were buried in deep pits with tons of quicklime.

The trustees of the Jefferson Medical College of Philadelphia have purchased a large property at the corner of Tenth and Walnut streets, immediately adjoining the present college and hospital buildings, on which they intend erecting a new hospital. The present hospital building is inadequate because of the great number of patients presenting themselves for treatment, the situation of the hospital, in the centre of the city, bringing many poor to its doors. It is said that von Esmarch, on visiting the Jefferson hospital some years ago, remarked that other institutions had finer buildings, but that this hospital was the greatest working hospital he had seen in America. The plans of the new building are such as to give not only satisfactory opportunities for treating patients, but also for teaching clinical medicine. Immediately on the completion of the new hospital, the present college building will be torn down and rebuilt in accordance with the most recent methods of teaching practical medicine.

The following medical societies and associations will meet during the month of May: American Academy of Medicine in Atlanta, Ga., 2d and 4th; Association of American Physicians in Washington, D. C., 2d and 4th; American Gynecological Society, in New York, 26th, 27th, and 28th; American Medical Association in Atlanta, Ga., 5th to 8th; American Laryngological Association in Pittsburgh, Pa., 14th to 16th; American Orthopedic Association in Buffalo, N. Y., 18th to 20th; The Association of Military Surgeons of the United States in Philadelphia, Pa., 12th to 14th; American Climatological Association in Lakewood, N. J., 12th and 13th; American Pediatric Society in Montreal, Can., ——; Connecticut Medical Society in New Haven, 27th and 28th; Illinois State Medical Society in Ottawa, 19th to 21st; Kansas Medical Society in Topeka ——; Louisiana State Medical Society in New Orleans, 5th; Missouri State Medical Association in Sedalia, 19th to 21st; Medical Society State of North Carolina in Winston, 12th; Ohio State Medical Society in Columbus, 27th to 29th; State Medical Society of Pennsylvania in Harrisburg, 20th; Washington State Medical Society in Tacoma, 19th to 21st.

Dr. Theodore B. Hyslop of St. Mary's Hospital Medical School, London, in discussing the mental propensities that appear late in life, remarks that "the main features of senility tend to group themselves into three main types, which have been termed respectively, dotage, anecdotage, and *table d'hôte*-age."

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, April 2, 1896.

JOSEPH D. BRYANT, M.D., PRESIDENT.

THE CLINICAL ASPECTS OF GLYCOSURIA.

DR. WILLIAM H. DRAPER read a paper with this title. He said that clinically glycosuria, like albuminuria, is a symptom, and hence is of variable significance. There was a great difference in the personal appearance of glycosurics, as well as a great variety in the derangements of health for which they seek relief, and in very many instances the glycosuria was first discovered by some specialist who has been consulted by them. No theory seems adequate to explain all the cases of glycosuria coming under observation. Physiological chemistry had demonstrated that glycogenesis was sometimes the result of an interruption in the metabolism of the carbohydrates, and sometimes due to a derangement in the metabolism of the nitrogenous elements of food. This fact, together with the knowledge that it developed after certain diseases and traumatisms of the nervous system, constituted about all our information of the pathology of glycosuria. We recognized clinically two varieties: (1) a variety in which it is apparently the result of imperfect combustion of the carbohydrates of food into their ultimate constituents, and in which the withdrawal of the carbohydrates and the substitution of animal food causes a disappearance of sugar from the urine; and (2) a variety in which the glycosuria persists even after the withdrawal of carbohydrates from the diet. The first form is mild and more or less controllable, while the second is grave and progressive. While it had been generally accepted by the profession that glycosuria was intimately associated with the glycogenic function of the liver, Pavy had always stoutly maintained that the liver was a sugar-destroying, and not a sugar-forming organ. From a chemical point of view, glycosuria is essentially a disease of suboxidation, but the cause of this suboxidation still remains shrouded in obscurity. From clinical observation, it would appear that in a certain small proportion of cases saccharin diabetes is due to direct heredity, and that, in a much larger number of cases, the disorder may be traced to an inherited constitutional incapacity for the easy and complete digestion of the carbohydrates—the starches and sugars. It was a matter of common bedside observation that gouty individuals found great difficulty in digesting any large quantity of sugar or starch food; and in view of the now very generally accepted belief that lithemic gout is a congener of glycosuria, this fact is significant. The speaker said that personally he had very frequently noticed the occurrence of glycosuria in gouty families. This feeble power for the digestion of starches and sugar was often forced upon the attention of the physician in his efforts to properly feed infants, as well as in the management of certain forms of dyspepsia. His own experience tended to confirm the statement expressed by some writers that the Hebrews appeared to be especially prone to glycosuria, and he would attribute this to their indoor life.

The disease, diabetes, is most commonly observed between thirty and sixty years, and more frequently in the male sex. The comparative infrequency of this disorder in early life might be explained by the general activity of the nutritive processes at that period, and the more common occurrence in men by the greater tendency to excessive eating and drinking, as well as greater exposure to traumatism. It could not be denied that sometimes physical strain or mental shock caused the production of diabetes, but he hardly thought that one was warranted in including excessive muscular exertion and paludal poisoning among the predisposing causes. Glycosuria occasionally occurred in persons without apparently affecting their general health, at least for a considerable time. In the mild form, only an ounce or two of sugar was voided in the urine in twenty-four hours, and while this could be made to disappear by an appropriate restriction of the diet, a very slight indiscretion would often cause it to return, and to remain for a considerable time. As a rule, the mild form after awhile passed into the grave variety. The most characteristic symptoms were tissue-wasting and progressively waning strength. The latter was particularly striking, and was hardly equaled by any other disease, except possibly typhoid fever. It should be remembered that in glycosuria there was a failure to evolve more force than was absolutely necessary for the demands of organic life. The other prominent symptoms —the thirst, the diuresis, and the inordinate desire for food—were all indications of the effort made by Nature to eliminate the sugar and repair the damage. There was often more water passed than was ingested during the same period of time, and this readily explained the desiccation of the tissues so characteristic of the disease. Among the more important complications of glycosuria were neuralgias, particularly of the sciatic distribution, parasthesiæ of various kinds, eczemas and other cutaneous manifestations, and albuminuria. It should be the rule when endeavoring to treat a specially obstinate case of neuralgia to examine the urine for sugar. The albuminuria associated with glycosuria is usually slight, although where it alternates with glycosuria, it may be considerable, and the diuresis very copious. This complication was more commonly observed in cases of senile glycosuria, and is probably, in most instances, an indication of the interstitial nephritis found in gouty or lithemic subjects.

As to the prognosis of this complication it might be said that individuals suffering from both albuminuria and glycosuria often enjoyed a very fair degree of health for a long time. It was well known that diabetes was also very frequently associated with obesity. One of the most troublesome complications of glycosuria was the obstinate constipation, which resisted, in many instances, the most powerful purgatives. There was an acute form of glycosuria, in which the patient usually gave a history of traumatism or great mental and physical strain, which rapidly went on to fatal termination. This, he thought, was probable nothing more than an acute exacerbation of an undiscovered mild glycosuria. As a rule, even in severe cases of the so-called "mild form" of glycosuria, the prognosis was good so long as the patient could be kept under con-

trol, and the disorder might not be incompatible with good and useful health for years. It should be remembered, however, that after a time these mild cases usually passed into the grave form. When the glycosuria persists in spite of a rigid anti-diabetic or animal diet, and especially if associated with an excess of urea in the urine, the prognosis was unfavorable.

There are two principles underlying the rational therapeutics of this disease, viz.: (1) The withdrawal of the carbohydrates; and (2) hastening the transformation of the carbohydrates into their ultimate elements. Of the many drugs, especially recommended for meeting the second indication, it should not be forgotten that not one had been successfully used except in connection with the restricted diet. As both iron and alkalies had the power of hastening oxygenation, they were of service in connection with the dietetic management—indeed, this combination of iron and the alkalies was probably the most useful of all that had been recommended. It was a significant fact that this particular method of medicinal treatment appeared to be of the most signal service in those cases of glycosuria occurring in gouty or lithemic subjects. The inhalation of oxygen gas and the use of enforced exercise would seem to be rational measures, but they had not proved successful clinically. Opium was considered by many to be the best drug for controlling glycosuria, and probably, when combined with the alkalies, it constituted the very best therapeutic method, outside of the dietetic treatment. The latter could not be considered at this time in detail; it could only be stated that the principle of the anti-diabetic diet was the conversion of the physiological type of man from an omnivorous to a carnivorous animal, and that at the present time this change could be effected with much less distress and difficulty than might be supposed.

Dr. William H. Thomson, in discussing the foregoing paper, said that notwithstanding the advances made in physiology and physiological chemistry, the disease, diabetes, remained as great a mystery as ever. He had long felt that it was not at all improbable that Claude Bernard had led us off on a wrong scent, for there were many facts that made it difficult to believe that derangement of the liver was the cause of glycosuria. Thus, in cases of sudden hyperemia of the liver, of brown induration, of neoplasm, of cirrhosis of the liver, glycosuria rarely occurred, and yet in these conditions its function was undeniably disordered, in some instances to a very great degree. During the past ten years some exceedingly interesting physiological experiments had been carried on with regard to the relation of the pancreas to the development of glycosuria. These had revealed the fact that if the whole pancreas were extirpated, glycosuria would ensue, but that if only a small portion of this gland were allowed to remain, and even of the small portion left behind were transplanted to another part of the abdomen, there would be no glycosuria. Further investigation had shown that there were certain cells in the pancreas which produced a secretion which, when circulating in the blood, prevented the production of glycosuria. When one recalled in this connection the well known and extensive changes in nutrition which follow the removal of the testicles, and the profound changes occurring in the osseous system consequent on the removal of that insignificant little gland, the pituitary body, it was evident that there was much yet to be learned regarding the exact relations of the glands to the human economy. He thought it quite possible, therefore, that diabetes might have a relation to the genesis of the glycolytic ferment.

Turning to the clinical aspects of glycosuria, Dr. Thomson said that age was a most important element in the prognosis—that younger the patient, the worse the prognosis. In an old person, glycosuria did not seem to shorten life, but, on the contrary, sometimes seemed to be a positive benefit. He did not believe that the glycosuria of old age was the same disease as glycosuria occurring in young subjects, the clinical manifestations were so totally different. If he might be allowed to propound a theory of diabetes, he would say that, as it had been conclusively proved that the starchy elements of the food were burned up in the muscles and not in the liver, and as in diabetes the difficulty was from the loss of the power of burning up the sugar, he thought it quite possible that diabetes might be due to a disturbance in the innervation of the muscles. This theory, at any rate, would satisfactorily explain many of the well-known clinical phenomena of the disease.

Dr. A. H. Smith said that one point seemed to be quite clear, and that was that the starting point of diabetes was a perversion of nervous influence. He had had in his own practise a striking example of the immediate development of diabetes as the result of profound mental shock, in the case of a gentleman who had been in good health until he had been involved in a runaway accident, after which he had promptly become diabetic. He had ascertained from the actuary of the life insurance department of the Brotherhood of Engineers that locomotive engineers were about seven times more liable to diabetes than other classes of men, and from the same source the probable reasons for this had been stated to be: (1) The constant jarring in the engine-cab; (2) the alternate cooling and heating of the body as the engine was in motion or at rest: and (3) the constant and excessive mental strain involved in this occupation. Dr. Smith said that he had came to think that the moment sugar began to circulate in the human organism, it continued to irritate the sensitive centre from which the disease had originated, and that in this way a vicious circle was established. He considered the element of heredity of so much importance, that he believed that a diabetic father should exercise extreme care in the selection of a business for his son, so that the latter would not be subjected to such strain or excitement as would be likely to develop the disease. He could confirm all that had been said by the previous speaker regarding the comparative mildness of glycosuria in old persons, and in this connection he also wished to utter warning against a too rigid enforcement of the anti-diabetic diet which, he believed, sometimes was responsible for precipitating the condition of acetonemia.

Dr. W. G. Thompson said that while indirectly heredity was an important element in the production of dia-

betes, it should be remembered that many people gave evidence of an inability to easily digest starchy foods, and yet they failed to develop glycosuria. When it was once developed it seemed to be under the control of the nervous system, and it was probably on this account that opium had been found such a useful remedy in the treatment of diabetes. So far as his observations had gone, there was but little danger of invoking the opium habit by such treatment. He much preferred opium to codeia, as the latter had been productive of but little benefit in his hands, in the treatment of this disease. He had been much interested in what had just been said regarding the danger of a too strict enforcement of an exclusive diet, and he believed that the best guide was the weight of the patient. This should be taken very frequently, and if there was a steady diminution in weight it was evident that the diet should be more liberal.

THE CUTANEOUS MANIFESTATIONS OF DIABETES.

Dr. Prince A. Morrow presented a paper on this subject in which he said that the skin was especially liable to give evidence of the impaired nutrition consequent on the development of diabetes, and that it was in diabetic subjects very prone to undergo suppuration, inflammation, or gangrene. He would divide the cutaneous manifestations of diabetes into two classes, viz.: (1) Those evidently of diabetic origin; and (2) those occurring occasionally or incidentally in the course of diabetes. In this disease there was often a very noticeable scantiness of the perspiration, and a harshness or fine desquamation of the skin. Pruritus, not only of the genitals, but of the general surface, was one of the most common of the disorders of sensation associated with diabetes. Among the trophic disorders might be mentioned the thinning and falling of the hair, and the falling of the nails. Erythema was observed in situations not reached by the urine, and consequently the idea that it was always due to the irritation of this excretion was not correct. Diabetic eczema of the female genitals was to be distinguished by the marked infiltration, the abundant secretion, and the glazing of the surface; in males it was characterized by the acuteness of the inflammation, the redness of the surface, and the profuse discharge, which in some instances was sero-purulent. Of the diabetic manifestations on the general surface of the integument, furuncles were the most common, and they were characterized by a greater multiplicity and tendency to sloughing than in ordinary boils. *Xanthoma diabeticorum* was a disease peculiar to diabetes, as its name indicated, and disappeared with the cessation of the glycosuria. *Herpes zoster* was sometimes especially severe in diabetics.

Dr. G. H. Fox said that he recalled seeing two cases of *xanthoma diabeticorum*. When an eruption of pale yellowish, flattened nodules was present on the lower portion of the back and buttocks, it might be said that the diagnosis of glycosuria was written on the skin.

Dr. S. Sherwell said that in his opinion a physician would be almost guilty of criminal negligence who would neglect to examine the urine for sugar in a case of extensive and persistent furunculosis, or in a severe case of pruritus vulvæ of obscure origin. In connection with this subject he wished simply to call attention to a papular, pustular, or pemphigoid eruption, named by Duhring herpetiformis, which was now known to be intimately associated with glycosuria.

REVIEWS.

The Toxic Amblyopias: Their Symptoms, Pathology, and Treatment. By George E. De Schweinitz, M.D., Clinical Professor of Ophthalmology, Jefferson Medical College of Philadelphia. Octavo, 240 pages, forty-one engravings, and nine full-page colored plates. Limited edition. De Luxe binding. Lea Brothers & Co., Philadelphia and New York, 1869.

Dr. De Schweinitz has evidently entered upon the study of toxic amblyopias with genuine interest in his subject, and he has not been content simply to familiarize himself with the work of other investigators in this field, but has supplemented their observations by numerous carefully conducted experiments of his own. His study of the literature of the subject, it is evident, has been most exhaustive, and not the least valuable feature of his monograph, are the very full bibliographical references which it contains. Nearly one-half of the volume (104 pages) is devoted to the consideration of alcohol and tobacco amblyopias. He differs from Nettleship, Eales, Gunn, and others, in believing that alcohol alone is capable, as tobacco is, of producing a definite form of amblyopia. The presence of impurities in the spirituous liquors consumed, especially of fusel oil, is thought to be an important factor in the production of amblyopia. Before the thirty-fifth year, amblyopia from alcohol is said to be exceedingly uncommon.

The pathologico-anatomical basis of "intoxication-amblyopia" (alcohol and tobacco-amblyopia) is a sclerosing inflammation, involving only a limited portion of the optic nerve, the papillo-macular bundle, and comparable to the interstitial hepatitis of chronic alcoholism. The clinical expression of this pathological process, is the existence of a central color-scotoma, especially for red and green, which in advanced and neglected cases, may become an absolute scoloma, in which there is not even light perception. Hirschberg believes that a differential diagnosis between tobacco-amblyopia and alcohol-amblyopia can be established by the location and form of this scotoma. In alcohol-amblyopia the scotoma is "peri-central," *i.e.*, it lies about the macula; whereas, in tobacco-amblyopia it is "para-central," being more distinctly oval in shape, and extending from the macula to the blind spot.

The author regards the smoking of strong tobacco as the most common cause of tobacco-amblyopia. He has met with one very interesting case in a young woman in whom amblyopia was produced by working in a tobacco factory, and he refers to other cases of a similar character. He does not believe that nicotin is chiefly responsible for the impairment of vision. The susceptibility to tobacco increases with age. It is also influenced by race—the

Turks and Spaniards enjoying a comparative immunity from tobacco-amblyopia.

The statement on page 86, that "the prognosis of pure tobacco-amblyopia is always good, provided the patient will abstain from tobacco," we regard as too sweeping. The stage at which the case comes under observation is necessarily a most important factor in determining the prognosis. Bichlorid of mercury, iodid of potassium, nitroglycerin and digitalis, in addition to strychin, are the remedies which are especially recommended in intoxication-amblyopia.

The section chiefly devoted to quinin amaurosis is especially full and interesting, and the visual disturbances of chronic lead-poisoning are also treated of at length.

The book is well printed, on heavy paper, and the plates, showing sections of the optic nerve, etc., are excellent. It is bound in white cloth, with gilt lettering, and presents a very attractive appearance, quite unlike the usual medical volume. The proof-reading seems to have been done with considerable care, but a few typographical errors have arrested our attention. At the bottom of page 21, the word "are" has been accidentally omitted; on page 35, "glonoin" is printed "gloniin"; the fraction on page 92, which should tell us the dose of glonoin, is incomplete; an important comma is omitted in the seventh line from the bottom of page 106; "to" must be supplied after "He refers" near the bottom of page 191; "is" is printed "in" in the fifth line from the bottom of page 193, and in the third paragraph from the top of page 207, "fails to avoid objects" instead of "avoids objects" is, we presume, what was intended.

The book is one that the scientific practitioner of medicine, as well as the specialist in ophthalmology, may read with interest and profit, and feel under obligation to its author for placing it within his reach.

OBITUARY.

Dr. J. West Roosevelt, a prominent physician of New York City, died suddenly of pneumonia, at his home in this city, Friday morning, April 10th. He developed his first symptoms on Thursday morning, but the disease advanced with alarming rapidity, edema of the lungs developed, and he died just eighteen hours from the onset of the disease. Death came so suddenly that it was a great shock, not only to his family and immediate friends, but also to the whole profession of the city. Dr. Roosevelt was an active member of the Academy of Medicine, the Medical and Surgical Society, the Pathological Society, and the Practitioners' Society. As a member of the Academy of Medicine, he became an active worker in the investigations undertaken by that organization in exposing the abuses that existed in the Croton watershed, and the exposure of the political corruption in the New York Quarantine Department. He was prominent in the movement that was made for the national control of the entire quarantine system.

Dr. Roosevelt was born in New York, July 2, 1858. He graduated from the Academic Department in Columbia College, and in 1880, received his degree from the College of Physicians and Surgeons. Upon his graduation, he went immediately abroad, where he spent several years in study at the various hospitals, and upon his return to this country, he began the practise of medicine in New York City. Although doing a general practise he made a study more especially of the diseases of the chest, and was considered an authority upon that subject. He was not only a thorough student, but a hard worker in his profession. He was attending physician at Roosevelt and Bellevue Hospitals, and also at the Seton Hospital, in Yonkers.

He was a first cousin of Theodore Roosevelt, president of the New York Police Board, and also of James R. Roosevelt, secretary of the Legation at London. Dr. Roosevelt married Miss Laura D'Oremieulx, who is left with three of five children that were born to them.

Dr. James J. Mapes, a noted physician among the younger members of the profession in New York City, died Friday, April 10th, at Saranac Lake, from tuberculosis after an illness lasting nearly six months. He was a son of Charles V. Mapes, and grandson of Professor J. J. Mapes, a scientist, after whom he was named, and a nephew of Mrs. Mary Mapes Dodge.

Dr. Mapes was graduated from the School of Arts of Columbia College in 1888. He was well known as an athlete during his college course, and was so popular among his fellow students that for three years in succession he was president of his class. His bright mind and powers of application attracted attention during his course in the College of Physicians and Surgeons, and at his graduation he stood at the head of his class. During his course there he spent his summers at the University of Edinburgh, Scotland, where he won the gold medal for the highest honors in anatomy. After his graduation he gained his hospital experience in the New York Hospital, and then went abroad and continued his studies at Vienna and Paris. While in Paris he studied under Dr. Roux at the Pasteur Institute when the discovery of the antitoxin for the cure of diphtheria was made. Upon his return to this country in January, 1895, an epidemic of diphtheria prevailed at the Nursery and Child's Hospital. He was appointed resident physician, and applied the antitoxin treatment with marked success. He contributed two articles on the antitoxin treatment of diphtheria to the *New York Medical Journal*, and delivered a series of lectures on the subject before the New York Polyclinic. Six months ago his health broke down, and he fell a victim to tuberculosis. He went promptly to Saranac Lake, where he remained until his death.

The sacrifice of this young and brilliant life, for Dr. Mapes was not yet thirty, is another example of the fatal tendency in the medical profession to overwork. He was one of five brothers, four of whom were noted athletes during their careers at Columbia College. An over-confidence in his physique undoubtedly prompted him to his excessive labors.

Dr. Mapes was a member of the University Athletic Club, the Psi Upsilon Club, and the Columbia College Alumni.

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ORIGINAL ARTICLES.

THE SURGICAL TREATMENT OF ROUND ULCER OF THE STOMACH AND ITS SEQUELÆ, WITH AN ACCOUNT OF A CASE SUCCESSFULLY TREATED BY LAPAROTOMY.

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THE operative treatment of round ulcer of the stomach and its sequelæ is a subject which has received much attention at the hands of surgeons in the past few years; and before relating the case, which was the incentive to this paper, it will be profitable to see what has been gained by surgical measures, and what is further to be hoped for along such lines.

The statement may to many seem a strange one, but gastric ulcer is one of the commonest diseases. The number of persons in Europe affected with it has been estimated[1] to be between 4 and 5 per cent. of the whole population, although no two writers agree on the exact figures, which range from 1.23 to 13 per cent., and Fiedler,[2] who examined, *post-mortem*, 2200 stomachs, found ulceration or its scar in 20 per cent. of the women, and 1.5 per cent. of the men. The disease occurs most commonly, as is well known, in early adult life (twenty to forty years), though the greatest mortality occurs at a later age (forty to sixty years).

Naturally it is of vital interest to the surgeon to know in what part of the stomach an ulcer is likely to be situated. It used to be stated that most ulcers occurred in the posterior wall and lesser curvature. Thus Brinton, who wrote his book on "Diseases of the Stomach," in 1858, said that 70 per cent. of gastric ulcers occupied these two situations. This view is not sustained by some recent investigations. Ewald says that ulcers occur especially in the greater curvature and in the pyloric region; or that part of the stomach which sustains the impact of irritating food, and also in that part which hangs lowest in an upright position[1], and in which the contents therefore collect. Ewald supports Nolte's figures that the relative frequency is as follows: in the greater curvature, 54 per cent.; in the pyloric region, 32 per cent.; in the anterior wall, 7 per cent.; in the posterior wall, 5 per cent., and in the cardiac region, 2 per cent.

Though usually the ulcer is single, two or more may be present, a circumstance which may affect the result of an otherwise successful operation. Orth[2] says that in twenty per cent. of the patients who suffer with gastric ulcer, more than one ulcer is present. As many as five have been found. This has an important bearing to be hereafter mentioned in the surgical treatment of non-perforating ulcers, *i.e.*, for the relief of pain or hemorrhage.

Even though so frequently met with, as has just been shown, the large majority of cases of gastric ulcer are successfully treated by rest in bed, appropriate diet—with perhaps rectal feeding for a time—and sedatives and laxatives, followed by tonics. But in certain cases these measures fail to relieve the severe symptoms; in others complications arise, notably perforation and hemorrhage, and in some instances intractable gastralgia, which all our therapeutic measures may be powerless to meet; in still others, by mechanical action the ulcer or its scar obstructs the pylorus, or establishes adhesions between the stomach and some adjacent structures, and thus interferes with the function of the viscus to a serious or to a painful degree.

The question of operative relief is pertinent then to such cases. It is most imperative in the perforation of an ulcer, and that subject will therefore first be discussed.

PERFORATION.

Perforation of a round, *i.e.*, non-malignant, gastric ulcer, is a serious complication, which, according to Comte,[3] occurs in about fourteen

[1] Ewald, "Klinik d. Verdauungskrank.," Berlin, 1893, p. 382.
[2] Fiedler, "Sitzungsber. d. Dresdener Vereins f. Natur u. Heilkunde," 1883.

[1] Doyen, *Arch. provinciales de Chirurgie*, November, 1894, has shown that the stomach is hung nearly vertical in the erect position so that the anterior curvature is nearly on a line with the cardiac opening.
[2] Orth, "Lehrbuch d. spec. patholog. Anatomie," Berlin, 1887, p. 744.
[3] Comte, *The Medical Week*, 1895, p. 457.

per cent. of the cases of that disease, and when it has taken place, it is nearly always fatal. Barling[1] says that ninety-five per cent. of the patients having such perforations, unless operated upon, die; and among the five per cent. of reported recoveries are some in which decided doubt may be cast upon the diagnosis, which is not always an easy one to establish.

When perforation does take place, one of three conditions obtains: (1) If adhesions are scanty, the stomach contents escape into the general peritoneal cavity, and a general peritonitis results. Such is apt to be the case in anterior perforations where adhesions are the exception, on account of the mobility of the anterior stomach wall, or of the adjacent hollow or solid viscera. (2) Adhesions may form, and the abdominal contents escape slowly. In these cases there is a localized peritonitis which may advance to an abscess, or the barriers of lymph may yield, especially if on the anterior wall, and a general peritonitis follow, as often happens in appendicitis. If the perforation presents itself posteriorly, the lesser peritoneum may become involved, and a large food of abscess result—*subphrenic abscess*. Very rarely it has happened that an adherent perforation has produced an abscess in the liver, without other lesion. Abscesses in the spleen are more frequent. (3) Adhesion of the stomach and discharge of its contents into a hollow organ. This is a very infrequent complication, which needs only to be mentioned.

PERFORATION INTO THE GENERAL PERITONEAL CAVITY.

This condition is indeed desperate, but under fortunate circumstances the *vis medicatrix naturæ* has been equal to the repair of even this lesion, and some dozen cases are on record, in which recovery has been perfect, though an undoubted perforation had occurred. In some of these cases evidences of the healed perforations have been found at a subsequent autopsy.

Pariser[2] has collected fourteen well-authenticated cases of acute gastric perforation, followed by recovery, without operation. In most of these it was distinctly stated that no food had been taken for some hours (three hours to three days), and the recovery in all such cases, according to this writer, depends upon the empty condition of the stomach. He is able to add a fifteenth case, which occurred in his own practise:

The patient, a woman, aged thirty-one years, had been under treatment for years for gastric ulcer, of which she presented all the clinical symptoms, including vomiting of blood. The various plans of treatment, including that recommended by Fleiner, of large doses of bismuth, were successively tried, without avail. Then starvation was resorted to. For three days nothing but an occasional spoonful of cold, boiled water passed her lips. On the third day all pain had subsided. On the evening of that day, after a quick movement of the body, there was sudden pain over the cardiac end of the stomach and collapse, with sunken eyes, imperceptible pulse, etc. In the weak condition of the patient, and the ill-adapted surroundings, Pariser concluded that an operation would be fatal, and he hoped to avoid peritonitis because of the empty stomach. For eight days rectal nourishment was adhered to, and after well-marked signs of localized peritonitis, the patient recovered.

But rest and rectal feeding offer so slender a hope of recovery that without the help of surgery it would still be true, as Leube once said, that "when perforation occurs—that most disastrous event in the course of gastric ulcer—the only treatment in most cases is to induce euthanasia."

It is, however, only in the last few years that surgical relief has been thought of as applicable to perforation of the stomach. In 1883 Nelson C. Dobson[1] lost a patient from gastric perforation. At the autopsy, the opening was found to be in the anterior wall, and so accessible that he reported the facts, and advocated in a similar case operative interference along one of the following lines: (1) Simple abdominal section with cleansing of the peritoneum, leaving the ulcer to heal of itself under rest and rectal feeding. (2) The closure of the perforation by suture either with or without paring its edges. (3) The suture of the stomach, at the point of perforation; to the abdominal wall in order to establish a gastric fistula.

These are principles which have been common to other minds. In 1880 Mikulicz sewed up an opening in the lesser curvature of the stomach of a man whose history was unobtainable. From the appearances at the operation as well as at the autopsy, it seemed likely that the perforation was not due to a recent ulcer, but to traumatism, the organ giving way at the site of a cicatrized ulcer. In 1885 and in 1887, Czerny did an unsuccessful case of suture of a perforated ulcer. Van Wahl in 1889, and Mouisset, 1890, published each a fatal case. These cases, together with one reported by Weir, likewise fatal, were published in the *International Medical Magazine* for February, 1892. It is not yet four years since the first suc-

[1] Barling, *Birmingham Med. Rev.*, August, 1895.
[2] Pariser, *Deutsch. med. Wochenschr.*, 1895, p. 468.

[1] Dobson, *Bristol Med. and Surg. Jour.*, 1883, p. 196.

cessful case was published by Kriege,[1] so that every contribution is of interest, which will add to the knowledge of a subject whose diagnosis and treatment are still imperfectly understood. Since that time the surgical treatment of perforating gastric ulcer of the stomach has widely spread, particularly in Great Britain, so that now the collection of such operations has attained a total from careful personal research of seventy-seven cases, obtained from American, English, German and French periodicals up to date.[2] Included in the report is a detailed account of a successful result by operation in a case under our joint charge where the happy issue was largely due to the two factors of a positive diagnosis and a promptly following laparatomy.

PERFORATING ULCER OF STOMACH—EARLY LAPAROTOMY RECOVERY.[3]

Mary B., consulted me in August, 1894, for an obstinate cough, with scanty expectoration and pain in the sternal and right scapular regions, with dyspnea on exertion, headache, anorexia, and constipation. She had twice spit up a small amount of blood. For four months she had had night sweats. The patient was at that time fifteen years old, heavy but anemic. Physical examination showed dulness and fine moist râles at the left apex, and right base behind, and she had an afternoon fever. Under tonic and expectorant remedies, and a month's residence in the mountains of Sullivan County, N. Y., she gained weight and the râles disappeared, except at the base of the right lung. The following winter she neglected herself, and, when I next saw her in April, 1895, her cough was worse, and she had moist râles over the greater part of both lungs, and she had lost six pounds in weight. Though living in poverty, she was able, through friends, to spend three months of the summer in the mountains, and she did not return to the city until the last of September, 1895, when she took a position as maid in an apartment, where the work was light and her food good. Her health was excellent, the cough and râles had disappeared, and her weight, 110½ pounds, was greater than it had ever before been. I was never able to get any sputum for examination, but the signs of pulmonary tuberculosis had been too well marked to be doubted.

She had frequently been troubled with indigestion, and at various times had vomited her food, but these symptoms had not been the prominent ones. About November 20, 1895, she began to have severe gastric pain, and her appetite failed her. She spoke to no one about it and kept on with her work, though eating almost nothing. The pain, too, was at times so severe that she was compelled to lie down. November 27th, at 10 A.M., she was attacked with a colicky pain in the gastric region so severe that she rolled upon the floor in agony, and vomited a small amount of coffee, which was the only nourishment she had taken that day. About noon she felt a little relief, and went home by the elevated road. To do this, she walked about a quarter of a mile, and climbed up and down some fifty steps. Late in the afternoon she sent word to me that she had an "attack of pain in the heart." At 6.30 P.M., I found her lying on her back, quiet and without much pain. Pulse, 120; temperature, 102°. The facies, though not well marked, was of a purely abdominal type. The chest revealed nothing abnormal. The abdomen was somewhat rigid, and more so on the left side than on the right. There was moderate tenderness on pressure in the epigastric and left iliac regions. There was no distention, nor tympanites. Respiration was almost wholly thoracic. Palpation revealed nothing but the seat of tenderness. The pain was described as commencing to the left of the median line under the costal border, and extending thence to the left groin and into the left thigh. Appendicitis was out of the question, and the symptoms did not seem those of any form of intestinal obstruction. The diagnosis of perforated gastric ulcer was made, and an immediate operation advised. Dr. Weir kindly consented to admit the patient to his service at the New York Hospital, where he performed laparotomy, and sutured the stomach at 9.30 P.M., a little over eleven hours after the onset of the attack.

Under chloroform, a median incision 4½ inches long, was made above the umbilicus. An unusual amount of subperitoneal fat obscured the peritoneum. When its cavity was opened the stomach presented in the wound. The greater curvature appeared normal. There was no general peritonitis. The anterior surface of the stomach was adherent to the liver by recent lymph. As it was separated, a hissing sound was heard, due to the escape of gas from the stomach through the perforation.

The opening was found without difficulty. It was minute—not one-fourth inch in diameter, with necrotic edges, and lying in the centre of a dense ring of inflammatory and fibrinous tissue, which involved the whole thickness of the wall of the stomach. This thickened area was about two inches long and one inch wide, and was situated in the anterior wall of the stomach, about midway between the greater and lesser curvatures, and perhaps one-third of the distance from the pyloric to the cardiac orifice.

In separating the stomach from the liver, some

[1] Heusner, *Berl. klin. Wochenschr.*, 1892, p. 1280.

[2] Comte, in the article already referred to, says that he has collected sixty-five cases of laparotomy for perforation of a gastric ulcer with forty-six deaths. He gives no details nor references whence they were obtained. He may have, and probably has, included, to make up the total, perforations associated with chronic subphrenic abscess. As the clinical picture and treatment of these two sets of cases are so distinct, it has been thought better in this paper to keep them separate. Those cases have also been excluded where no data have been given excepting the name of the operator.

[3] Reported by Dr. Foote.

thin, greenish fluid, containing a few flakes of curdled milk, escaped. This was sponged away as quickly as possible, while the perforation was promptly closed by the finger's end until gauze pads could be placed in position around the field of operation.

Two silk stitches were first inserted through the wall of the stomach, across the perforation, to stop the escape of gastric contents, and then the perforation was carefully closed in layers—Lembert style—with fine black silk. The fold in the stomach was made transverse, which was also the direction of the long diameter of the thickened area spoken of above. Owing to the hyperplastic condition of the wall of the stomach about the perforation, some of the peritoneal stitches of the first row cut the tissue and could not be drawn tight. The second row held better, and when a few additional stitches were applied in the centre as a third row, the closure was complete. About twelve peritoneal sutures were used in all. No collections of stomach contents were anywhere found, and a sponge thrust into Douglas' pouch and into the upper peritoneal cavity, came back clean. A stomach tube was then introduced through the mouth, and the stomach carefully washed out. The contents consisted of a sour, bile-stained fluid, containing a small amount of coagulated milk and three or four bits of orange. By this lavage the stomach was moderately distended, but no drop of fluid leaked through the suture. Abdominal irrigation was not employed, but the peritoneum was wiped with moist gauze wherever the gastric contents had soiled it. The abdominal wall was closed in three layers, *i.e.*, peritoneum, fascia, and skin, with catgut, kangaroo tendon, and black silk, respectively.

The operation lasted about one hour, and the patient left the table in only fair condition, with a pulse of 150. For two days there was frequent and very distressing vomiting, temporarily relieved by gentle lavage with diluted Thiersch's solution. After the second day the vomiting subsided, and water was allowed by the mouth. Fluid nourishment was given on the third day, and the nutrient and stimulant enemata, which had been given every six hours following the operation, were stopped in four days. There were at no time any signs of general peritonitis. Recovery was otherwise uneventful.

As an offset to this case, a second one is presented with a fatal issue, where the diagnosis was obscure and the interval between the attack and the operation unduly prolonged. Chronologically, this preceded the one just given, and contributed much in the way of instruction. The patient was treated for two days by an outside physician, and then sent to the New York Hospital and placed in Dr. Weir's charge January 19, 1895. The following is an abstract from the hospital records:

P. K., forty-four, male. Gastric history of one year's duration, with indigestion growing steadily worse. On two occasions there have been crises marked by an attack of severe pain, and followed by vomiting; but no hematemesis has ever occurred.

Two days ago, following a drinking bout, there was an attack of sharp epigastric pain, so severe that it required two grains of morphin, administered hypodermically, to relieve it. The pain rapidly spread and later was more intense in the right iliac region. Vomiting followed the attack and has persisted. The abdomen was at first retracted. On the day following the attack, hiccough began and has continued.

On entrance to the hospital, forty-eight hours after the attack, the face was drawn and anxious, and the pulse weak and rapid (P. 140, R. 36, T. 104°), abdomen not distended, but intensely tender and rigid, especially in the region of the appendix. Extremities cold.

Immediate operation was determined upon and performed by Dr. Weir, chloroform being administered. A four-inch incision was made over the appendix, and that organ being somewhat enlarged, was excised. It contained no perforation, was not adherent, and evidently was not the origin of the general purulo-fibrinous peritonitis which was present. The pelvis was found to contain over a pint of bloody, purulent fluid.

A four-inch median incision was then made above the umbilicus, and a perforation was discovered in the anterior wall of the stomach about one-fourth inch in diameter. It was situated about one inch from the pylorus. Pressure on the stomach caused the escape, through the perforation, of air and some bilious matter. No adhesions were present to shut off this opening. It was closed with two rows of silk sutures—Lembert style. The abdominal cavity was sponged as clean as possible, and drained through both wounds with iodoform gauze. Stimulant and nutrient enemeta were given, and other stimulants were administered hypodermically, but the patient survived only ten hours. Examination of the appendix showed that the inflammation was for the most part confined to its peritoneal coat.

REMARKS.

An examination of the tables here presented reveals several interesting facts.

Sex.—Five-sixths of the seventy-eight cases of gastric perforation occurred in women—eighty-two per cent. Brinton found that two-thirds of his 234 cases of perforation occurred in women, the perforation being the same as that of gastric ulcer, without perforation.

In perforation of duodenal ulcers (Table II) the figures are reversed, eight cases being males and only one a female. Latham[1] reports twelve autopsies, performed upon patients who had died

[1] Latham, *Lancet*, 1894, ii, p. 976.

TABLE I.—LAPAROTOMY FOR ACUTE PERFORATION OF GASTRIC ULCER.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
1	M	28	Gastritis	.....	Several.	Abdomen distended, tender.	Lesser curvature near cardiac end. Alcoholic fluid in cavity.	Perforation sutured Irrigation 1–1000 thymol.	Death in 3 hours. Probably traumatic rupture in an old healed ulcer.	Mikulicz, *Volk. klin. Samm-lung. Chirurg.*, 1885, p. 2310.
2	F	20	Gastritis 3 mos.; no vomiting.	.....	72	Prostration. P. 120, R. 60.	Ant. surface 3 in. from cardiac end (autopsy).	Ulcer not found. Fibrinous peritonitis; drainage.	Death in 4 days.	Czerny, reported by Steinthal, *Archiv f. klin. Chir.*, 1888, v. 37, p. 853.
3	M	33	Indigestion 8 yrs.; no blood.	After dinner sudden epigastric pain.	50	R. 36, P. 152.	Ant. surface near pylorus.	Ulcer closed by two rows of stitches. Irrigation .6 per cent. salt sol.	Death in 9 hours.	*Ibid.*
4	M	24	Gastric history.	.....	.....	Abdomen distended. Liver dulness diminished.	Lesser curvature (autopsy).	Purulo-fibrinous peritonitis; liver and stomach adherent; adhesions not disturbed. Irrigation, drainage.	Death the same day. Perforation found to be behind the adhesions, between liver and stomach.	Köhler, *Charité Annal*, vol. 15, 1888–9, p. 450.
5	F	47	Gastric history of 10 years; gastric ulcer.	During defecation, sudden abdominal pain.	18	Abdomen distended. Liver dulness decreased. Collapse.	Lesser curvature.	General peritonitis.	Death on the table.	*Ibid.*
6	F	16	Gastric ulcer.	Violent pain left side of abdomen. Later, vomiting.	24	.....	Stomach not examined. General peritonitis.	Irrigation and drainage.	Death 2 mos. later from empyema and abscess of lung. Autopsy showed ant. perforation.	Taylor, *Birming. Med. Rev.*, 1888, vol. 23.
7	F	17	Six mos. indigestion, vomiting, no blood.	Pain lower abdomen, caused unconsciousness.	34	.....	Anterior surface near pylorus; fibrino-purulent peritonitis.	Ulcer sutured; irrigation, boracic solution; drainage.	Death in 24 hours.	Czerny, *Arch. f. klin. Chir.*, 1889, vol. 39, p. 780.
8	F	Young	Gastric ulcer.	Sudden pain.	18	.....	Fibrinous peritonitis.	Ulcer sutured.	Death in 10 days. Subphrenic abscess had broken into l. pleural cavity. Suture in stomach firm.	Stelzner, *Verhand. d. Deutsch. Ges. f. Chir.*, 1889, p. 98.
9	F	Young	Gastric ulcer.	Sudden attack.	48	.....	.....	Ulcer sutured.	Death in 4 days from purulent peritonitis, following an unobserved second ulcer. Suture firm.	*Ibid.*
10	F	17	Gastric ulcer, no hematemesis.	Sudden pain lower abdomen.	34 (about)	Distended abdomen. Tenderness, especially in epigastrium. P. 120.	Anterior wall between curvatures, near pylorus.	Purulo-fibrinous peritonitis; perforation closed by 3 stitches; irrigation; drainage; op. 1½ hours.	Death in 24 hours; a second ulcer extended into the substance of the pancreas.	Mikulicz, *Arch. f. klin. Chir.*, 1889, vol. 39, p. 780.
11	M	46	Two years gastric ulcer, vomiting no blood.	Increased pain and vomiting.	120	Liver dulness diminished. Dulness l. lumbar region shifting with changed position.	Ant. surface near lesser curvature (autopsy). Much serous fluid.	Ulcer not found.	Death in 33 days from general peritonitis.	v. Wahl. Reported by Nissen, St. Petersburg *Medical Wochenschr.*, 1890. Nos. 41–42.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
12	M	34	Daily vomiting—never of blood.	Sudden epigastric pain after morning coffee, no vomiting.	30	Peritonitis.	Anterior surface near lesser curvature.	Stitches would not hold in necrotic wall.	Death at end of operation.	Mouisset, *Lyon Médical*, 1890, p. 516.
13	F	21	.....	Sudden violent abdominal pain and vomiting.	60	.....	Anterior surface. (Autopsy). General peritonitis.	Ulcer not found; drainage.	Death in 8 hours.	Parsons, Dublin *Jour. Med. Sci.*, 1892, p. 27.
14	F	.....	Indigestion.	Violent pain l. hypochondrium. Collapse.	8	.....	Anterior surface, close to lesser curvature, cardiac end.	Ulcer could not be sutured. Stomach stitched to abdominal wound.	Death in 6 days.	*Ibid.*
15	M	41	Gastric ulcer.	Severe epigastric pain. Collapse.	8	.....	Anterior surface, cardiac end.	Both recti cut transversely, ulcer sutured, no irrigation. Drainage.	Recovery. No nourishment by mouth for 13 days.	Kriege. Reported by Heusner. Berlin *klin. Wochen.* 1892, p. 1280.
16	F	21	Four we'ks hematemesis and pain.	Sudden abdominal pain. Treated by morphin for two days.	57	Peritonitic signs, well marked.	Anterior surface, near cardiac orifice. Gastric contents in vicinity. A pint of pus in the pelvis.	L. rectus cut transversely. Ulcer sutured. Sponging. No irrigation. Operation 1^{1}_{2} hrs.	Death in 10 days from peritonitis, following a duodenal perforation, due to intestinal obstruction. The small intestine was caught in a rent in the omentum. Suture in stomach gangrenous.	*Ibid.*
17	F	71	40 years ventral hernia.	Following strain, sudden abdominal pain and vomiting.	48 (about).	Dulness and resistence right hypochondrium.	Posterior wall. (Autopsy).	Incision over tumor. General peritonitis. 81 stones removed from gall-bladder. Cystic incision sutured. Drainage.	Death next day, gall-bladder not perforated. Peritonitis from perforation of post. gastric wall.	Körte, *Verh. d. Deutsch. Ges. f. Chir.*, 1892.
18	F	Young.	Gastric ulcer.	Sudden attack of pain.	36	Abdomen distended.	Anterior wall, near lesser curvature and cardiac extrem.	Ulcer pared and sutured. Irrigation and drainage.	Death in 5 days from septic peritonitis hastened by hemorrhage from a duodenal ulcer.	Lücke, Pinner, *Centralbl. f. Chir.*, 1893, No. 28.
19	F	18	Imperfect gastric history.	Sudden umbilical pain, vomiting, prostration.	80	Distended peritonitic abdomen. P. 148, T. 100°.	Middle posterior wall, near lesser curvature. (Autopsy).	Stomach not examined. Both tubes and ovaries removed.	Death in 24 hours.	F. Markoe, Weir in *Internat. Med. Mag.* February, 1892.
20	F	57	Gastric history. No vomiting.	Sudden abdominal pain, prostration. Bilious vomiting.	100 (about).	P. 100, T. 100°. Advanced peritonitis.	Middle anterior wall, near lesser curvature. General fibrinous peritonitis.	Ulcer closed by two rows of stitches. Irrigation with Theirsch's sol.	Death in a few hrs.	Weir, *Internat. Med. Mag.* February, 1892.
21	F	22	Indigestion.	Severe abdominal pain. No vomiting.	26	Abdomen distended.	Anterior wall, midway between orifices.	Purse string suture, as Lembert's stitches failed to hold.	Death in 6 hours.	Sterling, *Austral. Med. Gaz.* 1893, p. 281.
22	F	20	Indigestion.	Sudden intense abdominal pain and collapse	9	.....	Cardiac end, rather on the posterior surface.	Ulcer sutured. Irrigation with creolin water. Drainage. The suture in the stomach did not hold, and on the 17th day an unsuccessful attempt at resuture was made. Four days later the stomach was successfully sutured.	Death on the 31st day after first operation from septicemia. There was a large abscess between the stomach and liver.	Gilford, *Brit. Med. Jour.*, 1893, i, p. 944.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
23	F	26	Gastric ulcer, no hematemesis.	Sudden pain, vomiting, and collapse.	14	.....	Cardiac end, posterior wall.	Ulcer could not be excised nor sutured. Stomach stitched to abdominal wound.	Death in six weeks from abscess of left lung and empyema.	Haward, *Brit. Med. Jour.*, 1893, i, p. 952.
24	F	20	Dyspepsia.	Sudden severe pain l. hypochondrium. Faintness.	24	.....	Anterior wall.	Closed by two crossed sutures. Irrigation. Drainage above pubes.	Death in 14 hours.	Anson, *Lancet*, 1893, i, p. 469.
25	F	17	Gastric ulcer.	Sudden severe pain in the epigastric and left hypochondriac regions.	$3^1/_2$	.....	Anterior wall, near lesser curvature and cardiac extremity.	Closed by suture, Lembert's method. Irrigation. Drainage.	Death in 45 hours.	Haslam, *Brit. Med. Jour.*, 1893, ii.
26	F	22	No Gastric history.	Severe abdominal pain.	6	Abdomen distended.	Anterior wall. (Autopsy).	Stomach not examined. General peritonitis. Irrigation and drainage.	Death in 24 hours.	Barling, *Brit. Med. Jour.*, June 17, 1893.
27	F	20	Gastric ulcer.	Sudden severe pain in left hypochondrium. Vomiting.	96 (about).	Abdomen distended and tender.	Anterior wall, near lesser curvature.	Closed by suture. Irrigation. Drainage.	Death in 30 hours.	*Ibid.*
28	F	29	Gastric ulcer.	Sudden agonizing pain, epigastrium and l. hypochondrium. Vomiting.	8	.....	Anterior wall, near the middle.	Ulcer pared and sutured. Lembert. Irrigation. Drainage.	Recovery. Discharge of pus per rectum on 18th day.	Gilford, *Lancet*, June 2, 1894.
29	F	23	Indigestion.	Sudden violent abdominal pain. Collapse.	18	.....	Lesser curvature, near cardiac end.	Stomach stitched to abdominal wall, as ulcer could not be closed. Tube placed from abdominal wound into stomach through the perforation, a distance of 3 ins.	Death 8th day. No peritonitis. Rectal feeding 5 days.	Maurice, *Lancet*, 1894, i, p. 1373.
30	F	25	Indigestion.	Sharp pain spreading from l. hypochondrium over r. abdomen.	45	.....	Anterior wall, midway between orifices, 2 in. from lesser curvature.	Ulcer scraped. Lembert's suture. Irrigation. No Drainage.	Death in 34 hours.	Page, *Lancet*, 1894, i, p. 733.
31	F	16	Indigestion.	Acute pain l. hypochondrium. Faintness.	24	.....	Anterior wall, close to lesser curvature, $2^1/_2$ in. from cardiac end.	Lembert's sutures. No irrigation. No drainage.	Death in 14 hours.	*Ibid.*
32	F	34	.....	.....	Several days.	Tympanites. Liver Dulness present.	Anterior wall, near lesser curvature.	Median incision. Excision and suture of ulcer. Irrigation. Drainage.	Death in 5 days, of continued sepsis.	B. F. Curtis, operation January 2, 1894. Unrecorded.
33	F	35	Indigestion.	Sudden intense pain in epigastric, umbilical, and r. iliac regions. Vomiting at first.	26	Slight tympanites. Liver dulness present.	Anterior wall, near lesser curvature.	Lembert's suture. Irrigation with boiled water. Drainage through wound and r. loin and above pubes.	Death in 20 hours of continued sepsis.	B. F. Curtis, January 22, 1896. Unrecorded.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
34	F	20	Gastric ulcer.	Severe abdominal pain. Faintness and vomiting.	5	.....	Anterior wall near cardiac end.	Lembert's sutures. Irrigation. No Drainage.	Recovery. No nourishment by mouth for 60 hrs. 1 yr. later in good health.	Morse, *Lancet*, March 17, 1894.
35	F	26	Gastric ulcer. No hematemesis.	Sudden acute pain referred to chest.	$19\frac{1}{2}$	.....	At cardiac end close to posterior surface.	Ulcer excised, closed by 30 stitches. Free and troublesome oozing. Irrigation. Drainage.	Death in 12 hours.	Swain, *Lancet*, 1894, ii, p. 21.
36	F	41	Indigestion.	Violent umbilical pain. Faintness.	$8\frac{1}{2}$	.....	Posterior perforation $2\frac{1}{2}$ in. from pylorus.	Lembert's sutures in 2 rows. No irrigation. No drainage.	Recovery. Fed by rectum for 4 days, but water by mouth *ad libitum* in small quantities.	Bennett, *Lancet*, 1894, ii, p. 21.
37	F	22	Indigestion.	Sudden pain in l. abdomen. Vomiting.	61	.....	Anterior wall, $1\frac{3}{4}$ in. from cardiac end.	Sutured, irrigated, and drained from the pelvis.	Death in 48 hours.	Eve, *Lancet*, 1894. ii. p. 1091.
38	F	23	.....	.....	9	.....	Middle of anterior wall, near greater curvature.	Lembert sutures, 2 rows. Irrigation.	Death in 3 days.	Maclaren, *Lancet*, 1894, i, p. 671.
39	F	18	Dyspepsia.	Sudden pain and collapse.	9	.....	Anterior wall 2 in. from cardiac end.	Lembert sutures, 2 rows.	Recovery; well more than 1 year later.	*Ibid.*
40	F	20	.....	Sudden severe abdominal pain.	4	.....	Anterior wall 2 in. from cardiac end.	Lembert sutures, 3 rows.	Death in 58 hours. Peritonitis and gastric contents in peritonial cavity.	*Ibid.*
41	F	32	.....	Sudden epigastric pain and collapse.	3	Loss of liver dulness. Abdominal distention.	Anterior wall, at its upper part.	Lembert sutures, 2 rows. Irrigation with hot water. Suprapubic drainage.	Recovery without fever. Rectal feeding. Well 6 months later.	Nicholson, *Br. Med. Journal*, 1894, ii, p. 983.
42	F	24	Gastric ulcer.	Violent abdominal pain, vomiting.	6	T. 97°. P. 100. No distention. Tenderness in epigastrium and l. hypochondrium.	Posterior perforation high up toward cardiac end.	Gastro-colic omentum torn through. Ulcer excised. Gap closed by 14 stitches. Irrigation. No drainage. Op. 2 hours.	Recovery. Rectal feeding 5 days. 12th day severe attack of pain and collapse. Abdomen opened, nothing found, but adhesions. Recovery perfect.	Gowers, *Lancet*, 1895, i, 544.
43	F	24	Indigestion; vomiting once of blood.	Sudden pain two hours after food, no vomiting.	4	Abdomen soft, but everywhere tympanitic. Liver dulness obliterated.	Anterior wall, near pylorus.	Lembert sutures. Irrigation carbolic. 1–400 at 105°.	Recovery. Nothing by mouth for 48 hrs. Well 12 mos. later.	Morris, *Brit. Med. Journal*, 1894, ii, p. 862. *Lancet*, 1895, ii, p. 1573.
44	.....	.....	.....	.....	2	.....	Posterior wall.	Meso-omentum torn through and stomach everted. Suture. Irrigation through incision, and a tube placed above pubes.	Death on same day from pelvic peritonitis. Stomach tight.	Aitchinson, *Br. Med. Jour.* 1894, ii, p. 864.
45	.....	.....	.....	Sudden pain while walking.	.....	Collapse.	.....	.....	.....	Franks, *Brit. Med. Jour.*, 1894, ii, p. 865.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
46	....	.....	History not given.	.....	24	Collapse.	Location not given.	Ulcer not closed. Stomach stitched to parietes, after prolonged irrigation.	Death in 6 hours.	O'Callaghan, *Brit. Med. Jour.*, 1894, ii, p. 866.
47	....	.....	History not given.	.....	24	Collapse.	Location not given.	Ulcer not closed. Stomach stitched to parietes, after prolonged irrigation.	Death in 6 hours.	*Ibid.*
48	M	31	Gastric ulcer.	Sudden epigastric pain, aggravated by a glass of wine.	18	.....	Anterior wall, near cardiac end.	Double Lembert suture. Irrigation, boiled water. Drainage.	Recovery. Gauze out on 8th day. Purulent fistula 6 mos.	Michaux, *Rev. d. Chir.*, 1894, p. 94.
49	M	44	Gastric history 1 year.	Sudden epigastric pain. Vomiting. No blood.	48	No tympanites. Collapse. P. 140, T. 104°.	Anterior wall, 1 in. from pylorus.	Appendix first removed. Through second incision ulcer found and sutured. Purulo-fibrinous peritonitis. Abdomen sponged and drained. No irrigation.	Death in 10 hours.	Weir. Unrecorded. Op. January 19, 1895.
50	F	Young.	Indigestion.	Severe abdominal pain. Faintness.	10	.....	Anterior wall.	Suture of ulcer. Irrigation with carbolic 1–120.	Recovery.	Lundie, *Brit. Med. Jour.*, January, 26. 1895.
51	M	55	.....	Uncertain.	Some days	Distended abdomen.	Anterior wall. (Autopsy).	Perforation not found. General peritonitis. Incision and emptying of small intestine.	Death in 22 hours.	Bowlby, *Birm. Med. Rev.*, August, 1895, p. 98.
52	F	31	Gastric ulcer.	Violent pain in upper abdomen. Collapse.	9	.....	Cardiac end of lesser curvature.	Suture. Gastrostomy with glass tube also performed to prevent tension. Irrigation. No drainage.	Recovery. Rectal feeding, but plenty of warm water by mouth in small quantities.	Paul, *Brit. Med. Jour.*, April 6, 1895.
53	F	.....	.....	.....	.....	.....	Anterior wall.	Excision of ulcer. Lembert's suture. No irrigation. Drainage.	Death in 15 days from septicemia. Left subphrenic abscess. Stomach tight.	Silcock, *Lancet*, 1895, i, 1252.
54	F	15	Gastric history 4 months.	Intense abdominal pain. Vomiting.	56 (about)	Liver dulness absent. T. 101°. R. 33. P. 150.	Anterior wall, near lesser curvature.	Lembert's sutures. Double row. Irrigation. No drainage.	Recovery. Abdomen opened on 13th day. Symptoms suggesting a second perforation. None found.	Dunn, *Lancet*, 1895, i, 1252.
55	F	24	Gastric ulcer.	.....	Few hours	.....	Anterior wall. Surrounded by adhesions to liver.	No suture. Drainage tube to perforation.	Recovery.	Silcock, *Lancet*, 1895, i, 1252.
56	M	44	No gastric history.	Severe abdominal pain. Vomiting.	9	.....	Posterior wall, near lesser curvature.	Suture. Irrigation. Drainage.	Death in 16 hours.	Stable, *St. Thos. Hosp. Reports*, vol. 26, p. 186.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
57	F	20	Indigestion. No vomiting.	½ hr. after tea sudden epigastric pain and vomiting. Given castor oil, etc.	26	P. 132. T. 102.4°. Shock. Tympanites Liver dulness reduced.	Anterior wall, near cardiac end. Fibrinous peritonitis.	Ulcer pared. Lembert's suture. Double row. Irrigation. Drainage. Operation 1 hour.	Death in 15 days. Sepsis and pneumonia. Localized abscess and sloughing of sutures in stomach.	Horsley, *Brit. Med. Jour.*, 1895, ii, 78.
58	F	17	.....	.....	48	.....	Perforation surrounded by adhesions.	No attempt at repair of stomach.	Death in 9 days.	Wat. Cheyne, *Lancet*, 1895, i, 1253.
59	F	20	Gastric ulcer 4 yrs.	4 hrs. after tea. Sudden pain in l. hypochondrium.	13½	Liver dulness absent. P. 120. T. 100°.	Anterior wall, near lesser curvature, and 3 in. from cardiac orifice.	2 rows Lembert's stitches, catgut. Irrigation with boracic solution, No drainage.	Recovery. Rectal feeding. Lavage to relieve thirst.	Walters, *Lancet*, 1895, i, 484.
60	F	.....	Gastric ulcer 3 yrs.	Sudden abdominal pain before breakfast.	15 (about)	.....	Anterior wall, near cardiac end.	Ulcer excised. Suture. No irrigation. Drainage.	Death in 11 days. General peritonitis.	Horrocks, *Lancet*, 1895, i, 413.
61	F	21	Indigestion.	Sudden abdominal pain. Vomiting.	11 Days.	Tympanites. Liver dulness not diminished. T. 103°.	Not found until second operation.	Fluid and fibrinous peritonitis in region of stomach. Tamponade.	.....	
"	"	"	.....	.....	14 Days.	.....	Lesser curvature, 2½ in. from cardiac end.	Large median and transverse incisions. Perforation closed by twenty stitches. No irrigation.	Death in 18 hours. Abscesses between stomach and liver and spleen. Suture not tight. No peritonitis below colon.	Schuchardt, *Arch. f. klin. Chir.*, 1895, vol. 50, p. 615.
62	F	16	Indigestion.	Sudden abdominal pain and obstipation. No vomiting. Second day T. 102.5° P. 132. Third day, dejection after enema; opium.	4th Day.	Liver dulness present. Tympanites.	Anterior wall, 3 in. from greater curvature.	Suture. Feculent pus and gas about stomach. No irrigation. 2 drains inserted through chest-wall and diaphragm to above stomach and liver. Gauze drainage through abdominal wound.	Recovery. Daily lavage of stomach. Dejection 4th day. Long and profuse suppuration. T. 102.2° on 19th day. Fed only by stomach. Well in two months.	*Ibid.*
63	.....	.....	.....	.....	.....	.....	Posterior wall, near lesser curvature.	Suture impossible. Tamponed with gauze.	Recovery.	Hartmann, *Mercred. Méd.* 1895, p. 163.
64	M	40	.....	.....	.....	Signs of general peritonitis.	Near pylorus (Autopsy).	Incision over appendix and then in median line. No cause found for the peritonitis. Irrigation and drainage.	Collapse and death.	Quenu. Reported by Pasteur, *Mercred. Méd.*, 1895, p. 583.
65	F	20	Indigestion. Vomiting — never of blood.	Sudden pain epigastrium and l. hypochondrium. Vomiting 1 hr. later; abdomen rigid; thoracic respiration.	15	T. 100.2°. P. 92.	Anterior wall. near lesser curvature and pylorus. Serofibrinous peritonitis.	Lembert's suture. No irrigation. Drainage.	Recovery. Rectal feeding 9 days. Water by mouth.	Atherton, *N. Y. Med. Record*, 1895, i, p. 2.
66	F	20	.....	.....	60	.....	Anterior wall, near cardiac end.	.....	Death.	Helferich. Reported by Oergel, *Deutsch. Med. Wochen.*, 1895, p. 451.
67	F	Young.	.....	.....	30	.....	Anterior wall, near pylorus, adherent to l. lobe of liver. (Autopsy).	Perforation not found.	Death on 6th day.	Comte, *La Semaine Med.*, 1895, p. 406.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
68	M	48	Indigestion. Hematemesis.	Sudden attack of pain. Castor oil, etc., given.	48	Tender tympanitic abdomen.	Posterior wall, near pylorus.	Ulcer pared and sutured. Irrigation. Caster oil, turpentine, etc., in abdominal cavity. Drainage.	Death in 11 hours.	Lamphear, *Am. Journal Surgery and Gynecol.*, December, 1895.
69	F	19	Indigestion.	Hypochondriac pain.	9	T. 101.6°. P. 138.	Anterior wall, near cardiac end.	Lembert's suture, double row. Gas and lymph in abdominal cavity. Irrigation and lavage. No drainage.	Recovery. Fever for 3 weeks, and thrombus in l. saphenous vein.	Maurice, *Lancet*, 1895, ii. p. 980.
70	F	30	Gastric ulcer. 10 yrs. previous.	.....	19½	.....	Anterior wall, near lesser curvature.	Lembert's suture, double row. Peritonitis.	Death in 11 days. Abscess in peritoneum.	*Ibid.*
71	F	18	Gastric ulcer. Vomiting, not of blood.	Sudden epigastric pain 2½ hrs. after light meal. Vomiting.	7½	Abdomen tympanitic. Liver dulness diminished. P. 120, R. 32.	Anterior wall, near cardiac end, and 1½ in. from greater curvature.	Lembert's suture, 2 rows. Irrigation with boiled water. No drainage.	Recovery. Nothing by mouth for four days. Left crural phlebitis. Stitch abscess.	Pollard, *Brit. Med. Journal*, 1895, ii, p. 14.
72	F	17	Indigestion. Vomiting.	Sudden pain epigastrium and l. hypochondrium.	11½	Abdomen sl. rigid. Epigastric respiration.	Anterior wall, at about its centre.	Lembert's suture, 2 rows. Lavage per oram. No irrigation nor drainage.	Recovery. Rectal feeding 7 days. Stitch abscess. Well 5 mos. later.	Weir, November 27, 1895. Unrecorded.
73	F	25	2 months gastric pain and vomiting.	Epigastric pain some days.	(?)	Epigastric tumor. T. 101° F.	.....	Stomach adherent to abdominal wall. Perforation not seen. Drainage. No Irrigation.	Gastric fistula which closed spontaneously in about 2 months.	C. P. Parker, 1895. Unrecorded.
74	F	30	Slight gastric symptoms. No vomiting.	Obstipation 4 days.	36	Tympanites. P. 130, T. 97.	Lesser curvature.	General suppurative peritonitis. Perforation admits 2 fingers. Gastrostomy. Irrigation with boiled water. Drainage.	Death in 15 hours.	McCosh, 1890. Unrecorded.
75	M	40	Gastric ulcer.	Severe epigastric pain. No vomiting.	24	Moderate tympanites.	Middle of lesser curvature. (Autopsy).	Purulo-fibrinous peritonitis. Patient could not stand a search for perforation. Drainage.	Death in 14 hours.	*Ibid.*
76	F	49	.....	Sudden abdominal pain and vomiting.	.....	Tympanites. Collapse.	Anterior wall near lesser curvature. (Autopsy).	Gas, fluid, and coagulated milk in the peritoneal cavity. Abundant lavage.	Death in 2 hours.	Sourdille, *Bull. d.l.Soc. Anat.*, 1895, p. 301.
77	F	24	Gastric history. No vomiting.	Sudden severe epigastric pain.	84	Tympanites. Liver dulness absent. P. 120, T. 101.5°.	Anterior wall near superior border.	Gas escaped and stomach presented in wound. The perforation was the size of a 5-cent piece. It was trimmed and sewed. Abdomen sponged. No irrigation. Drainage through incision and in l. flank.	No food by mouth for three days. Recovery.	Kirkpatrick. *Mont. Medical Journal*, 1895, vol. 23, p. 670.
78	F	20	Gastric history. 6 months.	Sudden severe epigastric pain.	18	Tympanites. Collapse.	Anterior wall.	Thick lymph about perforation peeled from stomach wall. Perforation closed in rows. No irrigation. A second incision for drainage below the umbilicus.	Recovery. The lower drainage tube discharged twenty-two ounces before its removal.	Armstrong, *Mont. Medical Journal*, 1896, vol. 24, p. 505.

TABLE NO. II.—LAPAROTOMY FOR ACUTE PERFORATION OF DUODENAL ULCER.

No.	Sex.	Age.	Previous History.	Character of Attack.	No. of hours before Operation.	Condition at Operation.	Site of Perforation.	Operation.	Result.	Operator and Reference.
1	M	35	.....	Sudden pain after drinking bout.	20	Abdomen hard and tympanitic. Absence of liver dulness.	Ulcer perforating into peritoneal cavity 1¼ in. below pylorus. Second ulcer 1 in. below that. (Autopsy).	Incision for appendicitis. Free fluid smelling of sarsaparilla. Appendix and gall-bladder normal. Irrigation with salt solution.	Death in 24 hours.	Stimson. Unrecorded.
2	M	28	.....	Sudden pain in epigastrium and vomiting, following drinking bout.	60	Tympanites. Tenderness right hypochondrium. Prostration. T. 103°.	Posterior wall. (Autopsy).	Incision for appendicitis. No free fluid. Commencing peritonitis. Appendix excised.	Death in two days from general suppurative peritonitis. Autopsy showed the ulcer to be of the posterior wall. Pus had collected between the duodenum and pancreas, and had made its way through the necrotic wall into the jejunum.	*Ibid.*
3	M	28	No previous trouble.	Sudden abdominal pain. Prostration.	13	Distended abdomen. Pain to right of umbilicus. T. 100.6°.	Anterior wall, 1 in. below pylorus.	Ulcer pared and sutured and covered by omentum. Irrigation. Drainage.	Death in 3 hours.	Eve, *Lancet*, 1894, ii, p. 1091.
4	M	28	No previous trouble.	Sudden abdominal pain. Constipation. Vomiting.	6 Days.	Tympanites. P. 104. T. 99.8°.	Upper wall of duodenum, near pylorus. (Autopsy).	Incision below umbilicus. Two pints of pus in pelvis. Perforation not found.	Death in 52 hours from purulent peritonitis.	Lockwood, *Lancet*, 1894, ii, 968.
5	M	61	Gastric ulcer.	Sudden pain right hypochondrium. Collapse.	5	.....	Anterior wall, ¾ in. below pylorus.	Suture. Irrigation. Drainage.	Death in 60 hours from septic peritonitis. Vomited about a pint of blood. Ulcer finally closed.	*Ibid.*
6	M	28	No gastric history.	Pain to left of umbilicus, followed by constipation and on 3d day stercoraceous vomiting.	80 (about).	No fever. P. 130. Great tympanites.	Anterior wall of duodenum. (Autopsy).	Perforation not found. Purulent peritonitis. Drainage.	Death in 7 hours.	Lockwood, "Med. Soc. Trans.," 1892, p. 92.
7	M	41	Indigestion.	Sudden pain, constipation. Vomiting becoming stercoraceous.	(?)	Tympanites.	Posterior wall, 1 in. below pylorus. (Autopsy).	Perforation not found. Diffuse fibrino-purulent peritonitis. Irrigation.	Death in 10 hours.	*Ibid.*
8	F	27	Indigestion.	Sudden epigastric pain. vomiting.	30 (about).	T. 100.6°. P. 120.	Anterior wall, ¾ in. below pylorus.	Ulcer excised. Suture. Irrigation with boracic acid solution. No drain.	Nothing by mouth for 17 days. Apparent recovery. 2 months later intestinal obstruction from adhesions, and death. Duodenum healed.	Dean, "Med. Soc. Trans.," 1894, p. 305.
9	M	.....	.....	Sudden pain in epigastrium. Faintness and nausea.	.....	Tympanites. Liver dulness absent.	Anterior wall of first portion.	Gas and fluid in abdomen. Perforation sutured. Irrigation boiled water. Drainage.	Progressed well for 10 days, then pain and fever continuing till 25th day when abdomen was opened and adhesions and a drop of pus found between liver and diaphr'gm. Wound discharged for some days. Recovery complete.	Dunn, *British Medical Jour.*, 1896, i, 846.

from perforation of the duodenum, and ten of them were in males. Kelynack[1] reported six similar autopsies, all in males.

Age.—The average age of the women in our tables is twenty-five, and three-fourths of them were not above this age. The youngest one was fourteen years of age.[2] The average age of the men is thirty-nine years, and three-fourths of them were over forty years. In Brinton's list, the average age of the women was twenty-seven, of the men, forty-two years.

The average age in the duodenal perforations is essentially the same, viz.: women, twenty-seven; men, thirty-seven years.

Site of the Ulcer.—For convenience of description, the stomach is divided into an anterior and a posterior wall, a greater and a lesser curvature, and into a pyloric and a cardiac extremity. These terms represent areas without definite boundaries, and it is often difficult at operation to locate the exact site of the lesion; but of the cases in Table I, the perforation is said to have been forty-three times in the anterior wall, eleven times in the posterior wall, and six times in the lesser curvature. In twenty-seven cases, the perforation was said to be near the cardiac orifice, and only nine times near the pylorus. These figures do not agree altogether with the results of autopsies. Brinton found perforation to be twice as common in the pyloric region as in the cardiac one. According to Struve, in forty-two autopsies the perforation occurred twenty-one times in the anterior wall, thirteen times in the lesser curvature, and twice in the posterior wall.[3]

It is probable that the difficulty of reaching the cardiac extremity of the stomach through a median incision has sometimes impressed the operator with the idea that the ulcer was situated higher up than was actually the case.

However, the most important point in this connection is simply the accessibility of the perforation, and when we look over the tables with that idea in mind, we find that in the large majority of cases, it could be reached and sutured. In only eight cases is it stated that a suture of the perforation was impossible, either from its location, or the condition of the stomach wall, or that of the patient. This is by no means a bad record, on the contrary, it is an encouraging one.

In sixteen cases, the perforation was not found. In two of these it was considered unwise to separate adhesions between stomach and liver, to look for it—a fatal caution. In several other cases the real cause of the peritonitis was not suspected, and in nearly every case, as the autopsies showed, the lesion was readily accessible to discovery and suture, had a reasonably diligent search been made. In justice, be it said, however, that many of these cases occurred in the earlier days of this still new operation, and the operators had not the experience of others as their guide; also that the serious condition of the patient, often limited the duration of a proper exploration.

Previous History.—In less than one-half of the cases (37 per cent.) is it mentioned that gastric ulcer was suspected before perforation occurred. A few (8 per cent.) gave no previous gastric history, but the largest number (55 per cent.) complained of symptoms, variously interpreted as gastritis and indigestion, in other words, in ninety-two per cent. of the cases the history gave a clue to the diagnosis.

Vomiting.—It has been said that the absence of vomiting is a symptom of gastric perforation, but it does not appear to be so. Struve says that vomiting occurs in two-thirds of the cases, and is only likely to be absent in large perforations. In our own collection, where some history of the attack is given (50 in number), we find that in eighteen (36 per cent.), vomiting was present, while in only four (8 per cent.), is it stated that it was absent. In the remaining twenty-nine (56 per cent.), no reference is made to vomiting, but it would be manifestly unfair to conclude that in all these cases vomiting was wanting. Certainly, the presence of vomiting in nowise argues against the diagnosis of perforation of the stomach.

Elapsed Time.—Another, and the most interesting point, in connection with the surgical treatment of a gastric ulcer, is the time which elapsed between the perforation, and the operation done for its relief. It seems an invariable rule, that perforation is attended with an attack of sharp abdominal pain, so that the time of perforation can usually be determined. We find the average time which elapsed then, to be 36 hours, but the extremes being 2 hours and 336 hours, are so far apart that the average has little value. It is more instructive to notice that in twenty-one cases which recovered the elapsed time averaged nineteen hours, while in two-thirds of these cases it was less than twelve hours. In the fifty-five unsuccessful cases the elapsed time averaged forty-three hours, and over twenty-four hours in two-thirds of

[1] Kelynack, *Brit. Med. Jour.*, 1894, ii, p. 914.

[2] Colgan, Medical News, October 8, 1892, reported a case of a child of $2\frac{1}{2}$ years; attacked with convulsions; T. 106°, P. 150, and death in thirteen hours. No gastric symptoms, but autopsy showed a perforation of the posterior wall of the stomach at the cardiac end and near the greater curvature.

[3] Weir, *Internat. Med. Mag.*, February, 1892.

these cases. It requires, therefore, no discussion to prove how much better is the chance for recovery, when a perforation has existed ten hours than when it has existed twenty hours or more, and when a more certain diagnosis brings the patient sooner to the operating table, the percentage of recovery which, in the cases recorded up to date, is about twenty-nine per cent., will doubtless be improved.

Elapsed Time.	Recovery.	Death.	Mortality.
Under 12 hours...	14	9	39 per cent.
12 to 24 hours.....	4	13	76 per cent.
Over 24 hours.....	4	28	87 per cent.
Not stated.....	1	5	.....
Total.....	23	55	71 per cent.

Diagnosis.—What are then the essential points in early diagnosis, for here lies really the secret of success? There is almost invariably a history of gastric trouble, though not necessarily a well-marked history of gastric ulcer. There is an attack of sharp pain, referred usually to the epigastric or left hypochondriac regions, followed sometimes by pain in the lower abdomen. The pain is at first intense often producing collapse or unconsciousness, or even death. Usually it quickly moderates.

Vomiting may or may not be present. Vomiting of blood is very unusual. In one case hematemesis had been present for many days; but although the vomiting continued after the perforation, it was without blood. After some hours, the time varying according to the amount and character of the escaped gastric contents, the symptoms of peritonitis manifest themselves.

The physical examination of the patient is of great importance. In the earliest stage of the trouble the pallor, the anxious countenance, the feeble pulse, the thoracic respiration,[1] and the rigid abdomen, all point to the injury to the peritoneum. Just as in beginning appendicitis abdominal rigidity is sometimes more marked on the side where the lesion is situated, so in perforation of the stomach the abdominal muscles of the left side are apt to be more tense than those of the right side. If the stomach were empty, or nearly so, when perforation occurred palpation of the abdomen would only serve to locate the tenderness, and show the rigidity of the muscles. If a large amount of fluid has escaped from the stomach, its presence may be demonstrated by the usual tests for gastric fluid. In certain cases the induration in the wall of the stomach about an ulcer, makes a tumor which can be felt by abdominal palpation. This is worth remembering in this connection, although the tenseness of the abdominal muscles in perforation make deep palpation difficult.

If gas has escaped from the stomach or has developed by fermentation of the escaped gastric contents, the hepatic and splenic dulness may be reduced in area, or wholly disappear. It is evident that this condition might also follow intestinal perforation. But when the abdomen is opened the distinction between the two is plain, for the gas from the stomach is without odor, or slightly sour, while that from the intestines has a fecal odor.

Comte,[1] whose article on gastric troubles will well repay perusal, says that perforation of the stomach is most easily confounded with acute intestinal obstruction, but that fecal or fecaloid vomiting is usually present in the latter trouble.

Perforation may also be confounded with an attack of pain in a gastric ulcer, which has not perforated, as the following interesting history of one of Jower's[2] cases shows. It is just such facts which make one skeptical concerning the cases of perforation (?) which are treated successfully by rest in bed and rectal feeding.

Twelve days after operation (for perforated gastric ulcer in the posterior wall, which had been duly sutured) the patient was doing well and taking three ounces of milk and three ounces of mut ton broth alternately every two hours. In the morning of that day she complained of pain in the region of the stomach, going through to the back, and smaller quantities of food were given. About 1 P.M. the patient suddenly complained of intense pain in the region of the wound, and "spreading all over the stomach," as she expressed it. The abdomen was flat, but did not move with respiration. Half an hour later, as the patient was considerably worse, Jowers opened the abdomen and found the stomach adherent to the wound in the abdominal wall, and at the site of the sewn ulcer to the posterior wall of the lesser cavity of the peritoneum. There was no evidence of new perforation nor of peritonitis. Half a pint of milk injected into the stomach did not escape, and was washed out and the wound closed over a drainage tube. The patient recovered. One month later she had a similar, though lighter attack, which was relieved by morphia.

(To be concluded.)

[1] Possibly Litten's "diaphragm phenomenon" (New York *Med. Record*, 1895, ii, p. 901) may be absent on the left side, especially if any effusion has already occurred to paralyze or impair the diaphragm. At any rate it is a sign worth looking for.

[1] Comte, *La Semaine Méd.*, 1895, p. 405.

[2] Jowers, *Lancet*, 1895, i, p. 544.

HYDROTHERAPY IN TYPHOID FEVER.

By SIMON BARUCH, M.D.
OF NEW YORK.

The Medical News of February 8, 1896, contains an article on this subject, which may mislead by its *ad captandum* arguments, and which it may therefore be profitable to analyze and discuss in the interest of therapeutics. The author does not claim any practical experience with the Brand method, on the contrary, he "confesses to a prejudice against the immersion treatment of typhoid fever." But he is correct in the statement that "*an overwhelming majority of the profession is against the method.*" Being convinced by earnest investigation for five years that "the majority of the profession" is, as a rule, biased by the same ideas and prejudices, which pervade the article, and as a proper presentation of the latter may serve to dispel some of the mist that seems to envelop the ordinary conception of the *rationale* of hydrotherapy, it may be profitable and interesting to analyze this author's views and conclusions, and extract their logical gist, without wearying the reader with polemics.

The author starts out with the statements that, with rare exceptions, at "present all typhoid patients in hospitals in this country are treated by immersion, and all the private patients by methods that are hydrotherapeutic only to the extent of cool sponging; and that, although most expressions of opinion heard in societies or read in journals, favor the Brand treatment, a secret ballot would show an overwhelming majority of the profession against this method." This may be true; but it is not reasonable to presume that men like "*Osler and other eminent clinicians*," would "enthusiastically indorse" a method of treatment that has so little to commend it. These gentlemen mold the minds of the rising generation of physicians; they have large clinical material under the strict supervision of intelligent assistants, and they may therefore be accepted as reliable guides to the general practitioner. The cause of the overwhelming "secret ballot," which would be cast against the Brand method by "practitioners in the small towns," is not to be sought, as the author curiously enough claims, in their having "not only relatively, but absolutely better opportunities for studying typhoid than city physicians;" but in the fact that they rarely have the opportunity or the facilities for the bath treatment, and that they are generally prejudiced against it by reason of inexperience. That it is impossible to form a correct judgment of the comparative value of two methods of treatment unless both are practised under approximately similar conditions, goes without saying.

Since 1889, only three *outspoken* opponents have been encountered besides this author, and the first of these has seen the error of his way. These gentlemen did not claim to have any personal experience with the method. They frankly expressed a prejudice against it, just as the author has done. I would not impugn the sincerity of the advocates on the adverse side, but I must protest against deductions not drawn from actual experience. That one positive witness with experience is worth all the theoretical and sentimental negations that may be marshaled will be conceded by the fair-minded reader.

The author concludes from his observations that "bathing oftener than twice daily would produce depression in all but the most robust; that fifteen minutes is the proper limit of the bath; that boys often grow livid, and are enfeebled by bathing, etc." The reader must decide for himself how far these conclusions may be accepted. Then he may be able to answer the author's question. "Can it be expected that the typhoid fever patient would receive all the benefit from immersion that a healthy person gains and be immune from the possible disadvantages? The advocates of immersion practically answer this question in the affirmative," says the author. This seems to be of slight moment, however, for he simply brushes it aside and proceeds to make a comparison between the Brand bath and the swimming exploits of healthy persons from four to seventy years of age. He argues that the former must be injurious because "it is as cold and as long-continued as the latter, and is repeated two to four times as often as that which a healthy swimmer of average vigor can endure without depression; the typhoid patient has not the benefit of exercise during or after the bath," etc. "The fact that depression follows a course of bathing without obvious chilling (in the healthy), is well established" in the author's mind. Such is the drift of his argument.

Even if the proposition regarding the depressing effects of a course of bathing in health, could receive acceptance, it would be illogical to apply observations made on boys (the majority of his subjects), who are apt to exhaust their reactive capacity by pranks, before, during, and after swimming under a hot sun, in the open air, and in water of 70 to 80°, to fever patients, most of whom are adults, who are quietly placed into the tub, who are well rubbed by two attendants, who are in addition stimulated by brandy before the bath, and well

dried and wrapped up after it. Such a comparison needs but to be stated to be its own refutation. Moreover, if there is anything positively established it is the tonic effect upon the heart of a Brand bath *properly administered*. The pulse almost always becomes less compressible, less frequent, and loses its dicrotism; the respiration is deepened and slowed. All this was illustrated on page 224 of the Medical News, February 22, 1896.

The same nonchalance with which the author dismisses the denial of unfavorable effects of the Brand bath by the advocates of the latter, characterizes his denial of the value of the "magnificent accumulation of statistics." He reminds the reader of the misleading character of numbers, and of the tendency of advocates to doctor the returns in the interest of preconceived notions, etc. In his zeal for "conservatism," he does not hesitate even to "doubt the good faith of some who practice immersion in hospitals, but who do not urge it upon their private patients." That all this is written in lieu of actual evidence, is patent from the fact he frankly admits that "it is not possible at the present time to refute the case reports of hospital attendants, nor to show that the *post hoc, ergo propter hoc* fallacy has been committed."

That figures may mislead is doubtless true; but it happens that there are some statistics in typhoid fever that cannot mislead. These were not made by the originator of the Brand method, but by a man, occupying a high military position, Dr. A. Vogl, the chief of the medical staff at Munich.

Without entering into details, this painstaking search of the records of forty years of a hospital governed by strict military discipline shows, that a reduction of mortality from an average of twenty per cent. under all kinds of treatment, and during epidemics of different intensities, to 2.7 per cent. under Brand baths. Dr. Vogl summarizes these excellent comparative statistics as follows:

DIVISION II.

Cases.	Treatment.	Mortality.
5884	Expectant, 1841–78,	20.7 per cent.
2841	Expectant and bath combined, 1868–81,	12.2 per cent.
702	Strict cold baths and antipyretics, 1877–87,	7.6 per cent.
144	Strict cold baths and less antipyretics, 1882–89,	4.1 per cent.

DIVISION I.

428	Strict cold baths, 1880	2.7 per cent.

Excluding all other statistics these alone protect the Brand method against carping criticism, unfounded skepticism, and baseless prejudice. By these statistics carefully studied, I was convinced of the folly of my own prejudice; there cannot be a reasonable doubt cast upon a military record of eight thousand cases, prolonged through forty years. In the "Uses of Water in Modern Medicine," page 109, Volume II, I have presented a table of comparative statistics which furnishes an instructive view of this whole question. To this may be added the following statistics, presented by the translator of my book in the German edition.

FROM GERMAN SOURCES.

	Mortality.
Jürgenson, Tübingen, under expectant treatment,	22.1 per cent.
" " faulty bath treatment,	7.1 per cent.
" " strict " "	1.8 per cent.
Brand, Stettin, " " " "	3.5 per cent.
Leichtenstein, Stettin, " " " "	5.4 per cent.
Ratjen, Hamburg, " " " "	4.0 per cent.
Drasche, Vienna, " " " "	9.3 per cent.
Before " " " "	16.2 per cent.

FROM FRENCH SOURCES.

Tripier & Bouveret, Lyon, before bath treatment,	25.0 per cent.
" " " under " "	7.5 per cent.
Richard, in 38 cases, " " "	5.2 per cent.
Jubel-Renoy, expectant treatment,	14.2 per cent.
collective report under bath treatment,	7.3 per cent.
own cases under strict bath,	4.7 per cent.

FROM AMERICAN SOURCES.

Dr. Kelly, Philadelphia, before bath treatment,	17.0 per cent.
after introduction of "	4.5 per cent.
Dr. Elliot, Philadelphia, before bath "	24.0 per cent.
after bath treatment, since 1891,	7.4 per cent.
Dr. Thompson, New York, before bath treatment,	19.0 per cent.
after " "	7.0 per cent.

Among the remarkable italicized propositions submitted in the author's article is No. 4: "The cold bath removes comparatively little excrementitious matter from the body, it checks the tendency to sweating and throws the flow inward to organs already infiltrated or irritated by toxic principles." This *ex cathedra* statement is not supported by any evidence furnished, either by the author's observation or that of others. And it is directly contradicted by the exact experiments of Roque and Weil, who found that the urotoxic coefficient of the urine in patients suffering from typhoid fever is decreased; that while the coal tar antipyretics still more diminish it, the cold bath, increases it very materially—threefold in some experiments. That the blood is not "thrown inward" as the author fears,[1] is proved by the ruddy hue of the skin of the patient when emerging from a properly administered Brand bath. "In conclusion let me say that I am not writing to support a theory, nor to assail the advocates of an opposite theory, but to elicit the truth. I am open to correction and ready to acknowledge an error." These words of the author I heartily re-echo, for if any equally successful method of treating typhoid fever were devised, I would gladly abandon the justly unpopu-

[1] A recent editorial in the *Philadelphia Medical and Surgical Reporter*, quoted in the *Medical Record*, reiterates this fallacy, which cannot be too earnestly contradicted.

lar cold bath. Until this is done, it is our bounden duty to save lives by overcoming the prejudices and objections of its opponents.

The enthusiastic advocacy of the Brand bath with which I am credited is not due to the recognition of its merits only. A large share is due to the fact of which Brand himself has jocularly reminded me, viz., that my prejudice against it found expression in the Academy of Medicine, where I said in 1887, "The cold bath may be adapted to the German soldier, but it is too severe for the average American citizen." Having myself been a doubting Thomas, and being convinced that I was in error, I am the more desirous of making amends.

In conclusion it may be of interest to quote from a recent letter of Dr. A. Vogl, the medical director of the army at Munich, whose statistical records have been quoted above. Under date of the 20th of February, Dr. Vogl writes me: "I regret very much that the Brand method is not yet universally acknowledged, especially as none of the opponents have thoroughly tested it. We use it in the army whenever opportunity presents, with the best results, never over four per cent. mortality. Your recognition of its value is gratifying. The adverse position of the profession toward hydrotherapy injures the respect for our science; it would not otherwise be possible that so crude a water quack as 'Father Kneipp,' could maintain his position. In many desperate cases this empiric has obtained successes, which cannot be denied, and in cases in which physicians had tried all medicinal agents, but not even a cold compress."

In this country too, the medical profession will lose much vantage ground, if it continues to neglect hydrotherapy in chronic diseases, in which its effect is just as striking as in typhoid fever. How much more favorable the results would be if physicians would give attention to the *rationale* and applications of water in the treatment of disease, and not entrust it, as is but too frequently is done, to bath attendants and nurses, who possess only the most superficial, crude, and mechanical knowledge of the subject? Hydrotherapy should be applied in chronic diseases as it is in typhoid, under the frequent supervision of the medical attendant. The technic should be adapted to the condition of the patient and the indications of each case, which are liable to change, and which cannot be appreciated by bath attendants, no matter how familiar they may claim to be with the treatment. These water-cure establishments, not under skilled medical supervision, should be avoided. This may be the more readily done now, because several institutions exist in the city and are beginning to spring up in other medical centres, in which not alone the well-to-do, but also the poor may obtain a judicious hydrotherapy *under supervision of physicians*. The importance of an exact technic was emphasized in my paper before the Philadelphia County Medical Society, a report of which may be found in the Medical News of February 22, 1896.

CLINICAL MEMORANDUM.

CALOMEL AS A SPECIFIC IN DIPHTHERIA.

By LAWRENCE F. FLICK, M.D.,
of Philadelphia.

Mercury, among drugs, has held for years the first place in the treatment of diphtheria. Old time practitioners were loud in their praises of the yellow sulphate of mercury in the treatment of croup. In more modern times most excellent results have been reported from the use of corrosive sublimate, and in the hands of some, this preparation has given almost specific results. The fear of using large doses of corrosive sublimate, and large doses have been insisted upon by those who have reported success with the treatment, has no doubt stood in the way of a general adoption of this plan of treatment. At any rate the mortality from diphtheria has so persistently kept up under drug treatment that antitoxin has been welcomed as a substitute for all drugs in our contest with this disease.

In the applause for antitoxin it may not be out of place to call attention to such drugs as can be advantageously and safely used, if not alone, at least with antitoxin, for there remains yet a large mortality to overcome in diphtheria, in spite of the good results from the serum therapy.

Ever since the modern views about the use of mercury in diphtheria have been advanced, I have used the drug constantly, in some form, in the treatment of this disease. I have usually obtained good results but also have had failures. Somehow I have gradually drifted toward the use of calomel, and have come to employ it with rather surprising results. The method which I now follow entirely and with a certain precision, is to give calomel in very minute doses at short intervals. I administer from $\frac{1}{60}$ to $\frac{1}{120}$ of a grain of calomel, rubbed up with sugar or sugar of milk, every fifteen minutes to every half hour, dry on the tongue. This constitutes an easy and pleasant method of administration. The treatment is kept up day and night until all evidences of the disease have disappeared. The result in my hands has been so magical that I have myself been skeptical many times about my diagnosis. Since I have adopted this method of treating diphtheria, now nearly two years ago, I have not had a death from the disease, nor indeed a serious complication. I fully appreciate the fact, in connection with this statement, that my experience may mean very little, as I have not seen a very large number of cases,

tunities, to determine whether or not the method is worthy of recognition. I therefore make this report in the hope that it will be tried cautiously and condemned if found wanting.

MEDICAL PROGRESS.

Spontaneous Disappearance of an Inoperable Malignant Neoplasm of the Bladder.—SCHUCHARDT (*Deutsche medicinische Wochenschrift*, 1896, No. 9, p. 133) has reported the case of a man, fifty-seven years old, who for four years had suffered from difficulty in micturition, without pain. The urine, at times, appeared bloody; and for six weeks it had been turbid and stinking. There were pains in the hypogastrium; at times headache, constipation, emaciation, debility, cough, and expectoration. The appearance cachectic, but there was no fever or acceleration of pulse. The respiration was a little quickened and superficial. The pulmonary resonance was preserved and auscultation revealed bronchial râles. The expectoration was muco-purulent and copious, but contained no tubercle bacilli. Above the symphisis pubis was a prominence about as large as an ostrich egg, of firm consistence, and in close relation with the abdominal wall, particularly on the left. The overlying tissues appeared to be adherent, and only slightly movable upon the tumor beneath. Through the rectum a globular mass could be felt, almost filling the pelvis, and compressing the rectum. The prostate could be felt apart from the tumor, and behind it was a transverse fissure separating the two. Upon catheterization the lumen of the bladder was found greatly contracted. The urine was almost purulent and possessed an ammoniacal odor. A diagnosis of malignant neoplasm of the bladder was made and celiotomy undertaken. The rectus muscle was found infiltrated with nodules, varying in size up to a hazelnut, upon section presenting a medullary, homogeneous grayish-white appearance. The bladder was represented by a firm, nodular tumor, as large as two fists, free posteriorly, but adherent anteriorly and laterally. Upon the left the tumor was adherent to a loop of small intestine and in the immediate neighborhood the peritoneum was infiltrated with nodules of new formation The tissues of the pelvis were also involved, particularly on the left, where the iliac artery was surrounded by new growth. In view of all these facts, the removal of the tumor was not attempted, and the wound was closed as well as it could be, a portion, however, remaining open. The patient was collapsed for several days after the operation, and the temperature remained above the normal for three weeks. Suppuration took place in the wound and continued for some time, ceasing after the removal of some unabsorbed ligatures. Finally, however, the wound closed and the patient improved in weight, nutrition and general condition, being dismissed cured six months after the operation, and so continuing three months later, at the time of last report. It is to be regretted that an examination was not made to determine absolutely the nature of the neoplasm, and of the micro-organisms present in the pus discharged from the wound.

and my cases may all have been very mild. The majority of cases of throat trouble that come under my notice come early, before any membrane has formed. Hence, whilst I treat the usual percentage of throat cases that go with a fair-sized practice, I rarely have cases that have advanced to the stage of membranous deposit. However, the same happy results have been obtained in cases in which the presence of the bacilli had been determined by the bacteriological department of our city. I will relate three such:

M. S., aged eight years. Had been sick four or five days when I was called in. Found membrane lining fauces and pillars on both sides. Could not speak above a whisper; clammy sweats at intervals; no fever; poor pulse, but only slightly above normal in number. Gave $\frac{1}{60}$ grain calomel dry on tongue every fifteen minutes for forty-eight hours. Gave gargle of tannic acid and chlorate of potash in glycerin and rose water. At end of forty-eight hours membrane had all disappeared. Reduced dose of calomel to $\frac{1}{100}$ grain. Kept up treatment for a week. After second day gave some tincture of the chloride of iron, brandy, and tincture of nux vomica. At end of week voice had returned and all symptoms had practically disappeared. At end of two weeks bacteriological department reported no bacilli present.

F. S., aged five years. Began with fever, restlessness, and a very croupy cough; slight membrane visible on one tonsil. Bacilli reported present by bacteriological department. Gave calomel $\frac{1}{60}$ grain every fifteen minutes. Used same gargle as above. At end of twenty-four hours patient coughed up a well-formed membrane. Coughed severely for twenty-four hours more, but at the end of forty-eight hours all symptoms had disappeared and patient was convalescent. Kept up calomel in small doses and gave tincture of iron, brandy, and tincture of nux vomica. At the end of ten days bacteriological department reported no bacilli.

L. S., aged three years. Was taken with very high fever. Follicles of tonsils filled up, and tonsils and pharynx were swollen and red. Diphtheria bacilli were found by bacteriological department. Gave calomel $\frac{1}{60}$ grain every fifteen minutes and no other treatment. At end of twenty-four hours fever had disappeared. Gave the medicine less frequently and fever returned. Again gave it every fifteen minutes. At end of forty-eight hours all acute symptoms had disappeared. Decreased the dose to $\frac{1}{120}$ grain and gave at intervals of half hour, and later used the brandy, iron, and nux vomica. Improvement was rapid and recovery prompt.

Fully appreciating the danger of being oversanguine about results in any treatment of disease, and realizing that harm can be done by inducing others to take up a method which may fail in their hands and thus lead to loss of life, which might have been saved by other methods, I make this brief report with much reluctance. On the other hand, I have had such uniformly good results in many cases of throat trouble, which in the beginning looked like diphtheria, and also in successfully relieving cases of undoubted diphtheria, that I have felt it my duty to permit others, with better oppor-

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SATURDAY, APRIL 25, 1896.

COLLECTIVE INVESTIGATION.

Accurately observed and recorded facts within one's own sphere of observation contribute more to the advance of medical science than any amount of philosophizing from the limited experience of any one individual. And when these recorded facts are brought together from the personal experience of a large body of well-trained observers, the best possible condition exists for reaching wise conclusions.

The American Pediatric Society has, for several years past, pursued this plan of investigation, and the result has been not only to make a most interesting and profitable meeting for those present, but to establish a certain high rank of scientific excellence for the Society, and to settle for the whole profession some vexed and important questions. This year the Society asks its members to take up the subject of antitoxin treatment of diphtheria in private practise, and to report to the Society their careful observations upon certain important designated facts. It is a well-recognized principle that the results of hospital treatment differ widely from the same methods when applied in private practise, and the object of this investigation is to determine how successful, or how much of a failure, the antitoxin treatment of diphtheria has proved in the hands of general practitioners in their private work. The Society appeals to the whole profession, and each and every one who has had experience, in one or more cases, of the application of the antitoxin treatment, is requested to send in responses to the questions that appear in their circular, and which are reproduced in another column.

It is an encouraging sign to note that other societies have taken up this same method of study, and are putting it into active application. The Wisconsin State Medical Society, which meets in Madison, Wis., June 3d, 4th, and 5th of this year, will devote its entire session to the subject of preventive medicine. An effort has been made on the part of the president and the committee in charge to convert the whole medical profession of the State into a body of sanitarians. In a circular issued early in the year the whole regular profession were asked to be on the alert and take careful observation upon all points relating to hygiene and sanitation that might come within their observation. This had special reference to the pollution of water supply, contamination of the air, the adulteration of food, faulty methods of education and training of children, etc., etc. It is therefore expected, as the invitation announces, there will be "a rattle of musketry all along the lines against the unsanitary conditions and customs prevailing throughout the State." We predict for the Wisconsin State Medical Society a most interesting and profitable meeting, and extend to them our hearty congratulations on the enterprise with which they have undertaken this investigation.

ORTHOPEDIC SURGERY.

A CRITICAL RESUME OF RECENT PROGRESS.

One of the most evident advances in the management of chronic disability has been made recently in the effective treatment of congenital dislocation of the hip-joint. Although the anatomical conditions which are present as accompaniments or results of the deformity are now well known, its ultimate cause is likely to remain a mystery until an explanation of the clinical fact that up-

ward of ninety per cent. of the cases occur in females is offered.

The functional awkwardness, the evident insecurity and deformity, the discomfort, weakness, and pain that become more evident with the increasing weight of the body and strain of use, attracted attention to the importance of the disability in ancient times. It was described, and treatment was suggested by Hippocrates, Galen, Paré, and others of the older writers, and in 1829 Dupuytren, after a careful study of the anatomy and symptoms of the deformity, asserted that it was not only incurable, but that effective palliation was hardly attainable.

The term dislocation suggests, naturally, that the only effective treatment must be a replacement of the displaced bone. From this standpoint, an enumeration of some of the means used to attain this object, or to remedy the effects of the deformity, may be of interest, and will at least illustrate a diffusion of energy that may have postponed the solution of the problem of rational treatment.

1. To check the progress of the deformity, corsets and pelvic girdles have been used to exert pressure on the prominent trochanters.—Stromeyer, Lannelonge, Heine.

2. The weight of the body has been removed from the yielding capsule by the crutch action of a leg-brace. This, when combined with traction, or otherwise modified, has long been the most generally accepted form of treatment.—Hessing, Sayre, Schede.

3. Gradual reduction of the upward dislocation of the femur by long-continued traction and confinement to bed, followed by the use of retentive apparatus.—Humbert, Pravaz, Adams, Brown.

4. Traction at night only.—Volkmann.

5. Traction, forcible manipulation, and subcutaneous tenotomy. In 1841 Guérin advocated a method of preliminary traction: subcutaneous division of muscles and ligaments, forcible manipulation and scarification of the head of the femur and adjoining parts, for the purpose of exciting adhesive and retentive changes. A similar procedure has been suggested recently by Shaffer.

6. Forcible, immediate reduction of the dislocation by methodical manipulations.—Paci.

7. Forcible manipulation, subcutaneous division of resistant tissues, and subcutaneous enlargement of the acetabulum.—Brodhurst.

8. The injection of solution of chlorid of zinc, with the aim of exciting a retentive barrier above the head of the bone—*méthode sclérogène.*—Lannelongue.

9. Open operation, division of contracted tissues, with formation of a periosteal flap from the ilium to cover the head of the bone.—König.

10. Resection of the head of the femur and formation of a similar periosteal flap.—Hüter.

11. Resection of the head of the femur.—Roser, Reyher, Mollière.

12. Resection of the upper extremity of the femur and implantation of the stump in depression hollowed in the ilium.—Ogston.

13. Nailing the femur to the ilium.—Da Paoli.

14. Osteotomy of the femur on the sound side to adapt it to the deformity.—Mayer.

In 1890 the great advance toward ulimate cure by definitely carrying out the ideal treatment of a dislocation—replacement—was instituted by Hoffa. At this time, notwithstanding the various efforts enumerated above by some of which an occasional case had been benefited or cured, the prognosis, practically, was as hopeless as it was when Dupuytren pronounced it an incurable deformity.

Hoffa's theory as to the chief obstacle to reduction of the deformity was incorrect, and the technic of his operation has been greatly modified, but the credit of this great advance is his. He first attacked the problem with a definite and reasonable purposein view, and demonstrated its feasibility.

By the work of Lorenz and Hoffa, the anatomy of the deformity has been made clear; the obstacles to reposition that are present, either in the head of the femur, the size of the rudimentary acetabulum, or the changes in the capsule or other tissues are now known, and it is because they are known that the principles of treatment may be rationally judged.

This treatment, in the future, if it aims at ultimate cure, is likely to be limited to two modes of procedure, although the ultimate design is the same in both, viz.: (1) The replacement of the dislocation, without open operation, in the younger subjects, and when the secondary changes will

allow, by the method of Paci, or by the more comprehensive and reasonable procedure of Lorenz,—what he calls the functional weighting method (*functionelle belastungsmethode*). This is the result of its author's numerous experiments and practical experience in the largest number of open operations for the relief of the condition performed by any surgeon. It is not only a more effective means of reduction than that of Paci, but its use is rigidly restricted by an age limit, within which practical experience has demonstrated its feasibility. (2) For the more advanced and difficult class of deformity in which section of the hypertrophied capsule and enlargement of the deficient acetabulum may be necessary, the Hoffa-Lorenz operation will remain as the method of necessity.

Now that the disability has been removed at last from the list of incurable deformities, the more serious operation is likely to become less necessary; for as the attention of many workers becomes directed toward a definite system of treatment, with a definite object in view, which may be attained in a definite time, the importance of early treatment of the condition will be generally recognized by parents and physicians. Thus the indifference or the mistrust regarding treatment and the disbelief in the possibility of cure which exists at present, and which is the chief obstacle to its successful demonstration, will be overcome.

It is, perhaps, hardly necessary to add that, although the reduction of the dislocation is the essential preliminary of ultimate cure, yet the deformity habit remains, and will continue until the weakness of disused muscles has been overcome and until the body has adapted itself to the new conditions. For these reasons, careful and long-continued after-treatment and supervision will still remain essential to complete success.

Royal Whitman, M.D.

ECHOES AND NEWS.

The wave of measels, which has been passing over New York city, is still at high-water mark; but if the pleasant weather continues the Health Department officials expect it to subside. For the week ending April 11, 493 cases were reported, as against 426 cases the previous week. This, however, is a slight decrease from the average weekly report for March.

The public bequests under the will of the late Mrs. Josiah Vose divides the handsome sum of $380,000 among the charitable institutions of Boston.

From Pittsburg it is reported that Mr. H. C. Frick will build on a plot of ground containing about forty acres a hospital for children. The building is to cost not less than $500,000, and will be maintained in the most liberal manner.

The Philadelphia Board of Charities and Correction elected Dr. Charles W. Burr neurologist, to fill the vacancy in the medical staff of the Philadelphia Hospital, created by the resignation of Dr. Wharton Sinkler. Dr. B. F. Stahl and Dr. J. H. Gibbon were made nervous and surgical registrars respectively.

The Massachusetts Charitable Eye and Ear Infirmary is appealing to the State for $100,000 to assist in purchasing a site for its new building.

The popularity and value of the X-ray is still increasing. The charming young lady who recently expressed at a dinner party such admiration for the penetrating qualities of the cathode rays, has now named her latest culinary production the Röntgen pudding. Let all wise men beware!

The House Military Committee has ordered a favorable report on the bill giving to veterinary surgeons of the army the rank of Second Lieutenants of Cavalry. It provides, however, that the surgeons so promoted shall be graduates of veterinary colleges.

Dr. Thomas Herbert Brickerman, a prominent oculist of Liverpool, England, is visiting relatives in Philadelphia.

The American Laryngological, Rhinological, and Otological Society held its second annual meeting at the New York Academy of Medicine, on the 17th and 18th instants. The inherent strength of this young but talented body is evident in the careful management of its business affairs, the earnestness and harmony of its members, and the high literary and scientific character of its proceedings. This meeting was a marked success. Dr. Frank Hyatt of Baltimore, was elected president; Dr. Fred. L. Jack of Boston, vice-president and chairman of the eastern section; Dr. J. S. Maborn of Pittsburg, vice-president and chairman of the middle section; Dr. Jas. E. Logan of Kansas City, vice-president and chairman of the western section; Dr. Wm. Scheppegrell of New Orleans, vice-president and chairman of the southern section, and Dr. Robert C. Myles of New York, secretary and treasurer.

The University of Michigan is considering an extension of its medical course to six years, to correspond with the requirements of Harvard. It is found that many of the students in the former university at present combine their literary and medical courses in such a manner that the

two are completed in this time. It is proposed to make this obligatory, which will necessitate each graduate in medicine holding a literary degree as well.

Dr. Woods Hutchinson, Professor of Anatomy, State University of Iowa, has been elected Lecturer upon "Comparative Pathology and the Ancestry of Disease" in the Medical Department of the University of Buffalo.

At the meeting of the Tennessee State Society, Dr. G. W. Drake of Chattanooga, was elected president; Dr. T. R. Moss of Dyersburg, Dr. W. F. Clary of Bellbuckle, and Dr. J. B. F. Dice of Morristown, vice-presidents for Western, Middle, and Eastern Tennessee, respectively; Dr. C. R. Atchison of Nashville, secretary; and Dr. D. E. Nelson of Chattanooga, treasurer. The next meeting will be held in Nashville, commencing the second Tuesday in May, 1897.

The current number of the *British Medical Journal*, remarking upon the notable unanimity of the lay press in insisting upon the absolute sacredness of professional confidences, is led to point out the flagrant want of consistency in the English courts of justice regarding this question. Before one judge, damages may be found for revealing a professional secret, while another will hold a witness for contempt who refuses to violate such a confidence. Again, it is urged that the lips of a medical man might be sealed to his own or his family's disadvantage by a professional consultation imposed for exactly this ulterior motive. It is not impossible that much ultimate benefit may be reaped from the Kitson-Playfair trial in the final adjustment of this vexed problem. "The medical profession would be more than glad to accept the most rigorous ruling as to the inviolability of professional confidence, for this would greatly simplify their position. All they want is to have a definite law for their guidance, and to be protected against the discordant decisions of judges and the vagaries of impressionable juries and journalists."

There was a case at Montpellier some years ago, which, though far more dramatic than the Kitson-Playfair one, resembled the latter in that it largely turned on the revelation of professional secrets. A doctor of medicine at Montpellier was consulted by a mother as to one of his patients who was a suitor for her daughter's hand. The doctor at first gave an evasive answer to the questions put to him, but when the lady point blank asked him whether, as the father of a family, he would give his daughter to the young man, he felt constrained to reply in the negative. As the result of this communication the marriage was broken off. Some days later the doctor's carriage drove up to the local school of medicine, which he was in the habit of attending, without either the physician or his coachman. Search was at once made, and the unfortunate men were found lying dead on the road some distance away. For a time the origin of the crime was wrapped in mystery, but eventually the act was traced to the disappointed suitor, who, however, had blown out his own brains before the discovery was made.—*The Paris Messenger.*

As announced some time ago, the death of Dr. Wilhelm Meyer, of Copenhagen, who first called attention to the condition known as adenoid hypertrophy at the vault of the pharynx, and described the efficient means for its relief, has been followed by a movement of an unusual nature. It is proposed to erect a monument to Dr. Meyer in Copenhagen by subscription collected all over the civilized world from physicians interested in the operation for the removal of adenoids, and from patients who have been relieved by it. The cost of such a monument in Copenhagen is about one-quarter of what it would be here. For the furtherance of the enterprise an international committee was formed in Europe, the members of which are the presidents of the various national associations of laryngology. The representative upon the international committee for the United States is Dr. Wm. H. Daly. Dr. Daly has appointed a national committee for this country with Dr. D. Bryson Delavan as chairman, and as active members Drs. Harrison Allen, Philadelphia; C. E. Bean, St. Paul; J. H. Bryan, Washington; J. W. Farlow, Boston; F. W. Hinkel, Buffalo; J. E. Logan, Kansas City; A. Mathewson, Brooklyn; J. C. Mulhall, St. Louis; A. W. de Roaldes, New Orleans; C. W. Shields, Richmond; S. E. Solly, Colorado Springs; A. B. Thrasher, Cincinnati; H. E. Wagner, San Francisco; Gorham Bacon, New York; H. S. Birkett, Montreal; M. R. Brown, Chicago; T. R. French, Brooklyn; Samuel Johnston, Baltimore; J. H. Lowman, Cleveland; H. G. Miller, Providence; W. P. Porcher, Charleston; J. O. Roe, Rochester; E. L. Shurly, Detroit; H. L. Swain, New Haven; M. R. Ward, Pittsburg; C. V. Woolen, Indianapolis. Under the direction of the abovenamed gentlemen, who, it will be seen, have been selected to represent every part of the country, it is hoped that the collection of the desired amount of money will soon be accomplished. The treasurer for the New York division is Dr. Robert C. Myles, to whom, or to the chairman, Dr. Delavan, or to Dr. T. R. French of Brooklyn, subscriptions should be sent.

The Home Secretary recently refused abruptly to receive a deputation from the United Kingdoms Police Surgeons' Association, who wished to discuss with him an increase in the fees allowed medical witnesses. The evident injustice done medical men when required to appear in this capacity is by no means confined to Great Britian, where the scale of awards is about double that of this country. In almost every State of the Union there exists a law which, at least in all criminal cases, compels a physician to desert his practise often without warning and with heavy pecuniary loss to himself, and it maybe danger to the welfare of his patients, to appear as a witness before any court in the commonwealth. He is detained at the pleasure of the judge, who in turn is hampered by those obstructive methods so well known to criminal lawyers. When released he finds his way home at his own expense, having received the royally handsome honorarium of from one to three dollars per diem. The possession of knowledge that places the professional man in such demand as a witness should be recognized and remunerated accordingly.

ANNOUNCEMENT.

COLLECTIVE INVESTIGATION OF THE ANTITOXIN TREATMENT OF DIPHTHERIA IN PRIVATE PRACTISE BY THE AMERICAN PEDIATRIC SOCIETY.

THE committee of this society, to which this matter has been referred, desires to place before the profession, for collective investigation, the subject of antitoxin treatment of diphtheria, the cases for the investigation to be collected entirely outside of hospital practise and published as the report of the society.

Two points are to be made prominent: First, the length of time elapsing between the first appearance of the disease and the administration of the serum antitoxin. This is to be stated as accurately as possible, even to fractions of a day. Second, the severity of the disease as shown by (*a*) extent of membrane; (*b*) general prostration; (*c*) involvement of the larynx.

We cordially invite the co-operation of members of the profession in this investigation, in return for which the society will mail to each contributor the full report when it is published. An abstract giving the main facts will, however, appear in the leading medical journals, immediately after the meeting of the society in May.

Please fill out the accompanying blank and return it *at your earliest convenience* either to the president or the secretary of the society. Cases received after May 1st cannot be included in the society's report.

In behalf of the society,

JOSEPH O'DWYER, M.D., *President*,
967 Lexington Ave., New York City.
SAMUEL S. ADAMS, M.D., *Secretary*,
1 Dupont Circle, Washington, D. C.
L. EMMET HOLT, M.D.,
WILLIAM P. NORTHRUP, M.D.,
Executive Committee of the Council.

Please reply to the following inquiries; if it is not possible to answer all of them, answer such as are positively known, even if but two or three:

1. Age?..... Sex?.....
2. Condition—Good?.... Fair?.... Bad?.....
3. Time in fractions of a day, if known, from first appearance of the disease to first injection?..
4. Was diagnosis confirmed by culture?.....
5. Number of injections made?.....
6. Extent of membrane—Tonsils?..... .....
   Nose?.....
   Pharynx?.....
   Larynx?.....
7. Operation—Intubation?.....
   Tracheotomy?.....
8. Complications or Sequelæ—Broncho-pneumonia?.
   Nephritis?.....
   Sepsis?.....
   Paralysis?.....
9. Result?.....
10. Remarks; including other treatment, kind of antitoxin used, general impressions regarding the case, etc.....
11. Name of reporter.....M.D.
    Address.....

SOCIETY PROCEEDINGS.

TRI-STATE MEDICAL SOCIETY OF IOWA, ILLINOIS, AND MISSOURI.

Abstract of the Proceedings of the Fourth Annual Meeting, held in Chicago, April 7, 8, and 9, 1896.

THE Society met at the Great Northern Hotel, and was called to order by the president, Dr. R. H. Babcock, of Chicago.

After the reading of the minutes of the last meeting by the secretary, the report of the treasurer, and reports of standing committees, the president delivered his address. He selected for his subject Antitoxin, or Serum Therapy.

He said the crowning achievement in this line of research had come through the chemistry of bacteriology. Nuttall conclusively demonstrated in 1888 the power possessed by the blood serum of combating the poisonous products of bacterial growth, but to Behring and Kitasato, in 1891, belonged the credit of having found a practical means of utilizing antitoxins in the treatment of disease. To those who decry the antitoxin treatment of diphtheria as dangerous, and its advantages as not yet proven, Dr. Babcock commended the criticism by Welch in the *Johns Hopkins Bulletin* of October, 1895. His (Welch's) analysis of cases treated and published up to that time, sets at rest all doubt concerning the great reduction in mortality accomplished by this treatment, and renders the physician culpable who refuses this remedy to his patients. Sufficient experiments on lower animals, and trials on human beings had already been recorded to warrant the belief that we shall soon possess an effectual weapon against tetanus. Attempts had been made to treat typhoid fever patients, with serum obtained from dogs rendered immune, and from convalescents, but as yet observations were too few to warrant a more extended discussion of serum therapy in this class of cases.

Dr. Babcock then traced the efforts that had been made to combat tuberculosis by means of serum therapy, telling of the first discovery that certain animals possess comparative immunity from the disease. Detailing several experiments, he said a more intelligent use of tuberculin seemed to show that the early failures were due not solely to the inefficacy of the remedy, but to its injudicious employment in too large doses.

He next passed on to a personal trial of the remedy, citing the case of a young woman of twenty-one years, whose sister had died of pulmonary tuberculosis, and in whom well-marked signs of inactive disease existed in the right apex, the administration of antiphthisin for two months was followed by a gratifying disappearance of the malaise, nervousness, and occasional slight cough. He also treated a male, aged thirty-four, with satisfactory results.

Dr. Von Ruck had furnished Dr. Babcock with advanced sheets of a report, soon to be published, of one hundred and eighty-two cases of consumption in all stages treated with tuberculocidin and antiphthisin, in which recovery was obtained in thirty-two per cent. of the cases, arrest

or marked improvement in thirty per cent., and some improvement in sixteen per cent.

In closing, he said that whatever had been thus far accomplished, the field was broad and would repay painstaking investigation along the line of the antitoxin treatment of tuberculosis.

"SPECIAL EDUCATION AS A MEANS OF TREATMENT IN CHRONIC NEURASTHENIA."

This paper was read by Dr. J. F. Percy of Galesburg, Ill. Neurasthenia was considered the result of an imperfectly used and, therefore, improperly developed nerve organization. His treatment is to take patients out of and away from themselves, so to speak, and he knows no better way of doing this than to educate them as to the real facts back of their morbid tendencies. In his city there is an ably conducted kindergarten normal school, and when he has a neurasthenic woman he sends her, if possible, to this school to take the normal course there. The result has been that every case so treated has recovered. Moreover, he believes he has lifted the life of his patient to a higher level of thought and action. In one case the right ovary was buried in a mass of exudate beneath the uterus. Electricity, and especially pelvic massage, was practised for over a year with but little appreciable result. He stopped all treatment and insisted that the woman take a kindergarten normal course, which she did, and the result is that to-day she is well, so far as any morbid mental phenomena are concerned. The course of instruction should be carried out by competent teachers, setting at rest the nervous system, so far as receiving and being influenced by morbid impressions. The teaching should be suggestive rather than direct. It is necessary to classify the patients and instruct them by degrees. This plan, which he had merely hinted at, would do more for cases of neurasthenia than anything else of which he was cognizant.

"CANCER OF THE UTERUS COMPLICATED BY PREGNANCY; INDICATIONS FOR OPERATION."

Dr. A. H. Cordier, of Kansas City, Mo., followed with a paper upon this subject. The author reported a successful case of vaginal hysterectomy in a woman thirty-two years of age, the uterus being three months pregnant.

Of twenty-even cases tabulated by Dr. Vander Veer, of Albany, five died during labor undelivered, nine died during the puerperal period, three results not mentioned, and ten recovered, the mortality to mothers being sixty per cent. Another author reports thirty-four cases of cancer of the uterus, complicated by pregnancy, with a mortality of fifty-two per cent.

Dr. Cordier drew the following deductions: (1) Cancer of the cervix uteri, if left without surgical interferences, always kills. (2) The disease, in most instances, is primarily a local process. (3) Early hysterectomy will cure quite a percentage of these cases. (4.) The microscope, while a great diagnostic aid, is not infallible in its findings. (5) The experienced surgeon is warranted in resorting to an hysterectomy, even in doubtful cases. (6) All malignant pregnant uteri should be removed when seen, before the disease has advanced beyond the period of a probable cure.

DISCUSSION.

Dr. Ryan of Galesburg, cited an uncomplicated case of cancer of the cervix, which occurred in the hands of another practitioner, and in which the cervix was amputated, the patient being four months advanced in pregnancy. Following the operation she went on to full term, and the child was delivered without difficulty.

Dr. L. H. Dunning of Indianapolis, said that if he should find hardening of the cervix and the development of a neoplasm with the presence of discharges, sanguineous or offensive in character, even though the microscope failed to reveal positively the existence of malignant disease, he should be inclined to pursue the course recommended by the essayist. Relative to the advisability of removing the cervix alone, it might be done if the surgeon is certain that the epitheliomatous variety exists; yet the woman's life is in peril after the neoplasm is removed because of the scar tissue which remains. A case corroborative of this point was cited.

Dr. Rufus B. Hall of Cincinnati, thought the whole matter hinged upon the diagnosis. When the diagnosis was accurately made, it is perfectly clear what should be done. He favors total extirpation, believing that high amputation should only be done in exceptional cases.

Dr. D. C. Brockman of Ottumwa, Ia., emphasized the importance of early diagnosis. He believes the fault in these cases lies largely with the general practitioner, who does not understand the importance of irregular hemorrhages occurring in women approaching the menopause, and who prescribes a placebo at a time when a radical operation is needed.

Dr. Byron Robinson of Chicago, concurred with the essayist that the microscope alone was insufficient in many cases to enable the surgeon to make an accurate diagnosis of malignant disease of the cervix, and that more stress should be laid upon the clinical history of the case.

"DIFFUSE PELVIC INFLAMMATION."

This was the title of a paper contributed by Dr. L. H. Dunning of Indianapolis. Five cases were reported in which vaginal hysterectomy was resorted to for inflammatory disease of the uterus and appendages, after which the author summarized as follows: (1) In all of his cases except one, the uterus, on removal, was not found to be markedly diseased beyond a glandular endometritis. (2) In the two cases in which the uterus and appendages were fixed the operation was most difficult. The uterus in either case was little diseased. The chief pathological lesions were double pyosalpinx and pelvic peritonitis. The operation would have been easy and the results quite as good by the abdominal method. (3) In these cases the appendages were much more inaccessible and less open to ocular inspection than in the abdominal operation. (4) In his experience in clamp cases the pain after vaginal hysterectomy is greater the first two days than after celiotomy. (5) The systemic disturbances, as evidenced by the temperature and pulse rate, do not vary much in the two methods. The temperature after vaginal hysterec-

tomy is lower the first three or four days, but is higher after six to ten days, when the sloughs begin to give way, (6) In two cases in which ligatures were employed instead of clamps, abscesses in the stumps of the broad ligament followed, retarding the recovery of the patients. Many cases of abdominal section were done in the hospital during the same time, and in none of them did abscess appear. (7) In one case of the five prolapsus of the vaginal walls appeared a few weeks after the patient began to walk around. This was a ligature case. Such a prolapsus he had never witnessed in a forceps case. (8) In three of the cases the same pain and nervousness followed the recovery as sometimes witnessed in cases of abdominal section. In two of the cases the pain and nervousness passed off after several weeks, as it usually does after abdominal section.

DISCUSSION.

Dr. Rufus B. Hall said that women should be educated up to the point of avoiding septic infection, suppurating tubes and ovaries. The young men likewise should be educated to avoid gonorrhœa in order to prevent infecting their wives in future years. This being accomplished, gynecologists would have fewer pus tubes and diseased ovaries to remove.

Dr. T. J. Watkins of Chicago, believes there are cases which should be operated on by vaginal incision and drainage, while there are others in which the abdominal route was preferable. All large pus collections in the pelvis that could be opened and efficiently drained without entering the peritoneal cavity should be treated by incision and drainage through the vagina or above Poupart's ligament. Vaginal hysterectomy should be the operation of election in old, backward displacements, where the uterine appendages are destroyed by suppurative disease.

"DYSURIA IN WOMEN."

Dr. O. B. Will of Peoria, read a paper upon this subject. Acting upon the assumption of the zymotic origin of the trouble, his first thought was to neutralize the fermentative action taking place in the lower sections of the digestive tract. For this purpose he had used with great success charcoal and sulpho-carbolate of soda; the former administered in tablet form, five grains or more at a time, and frequently repeated; the latter in half dram or more doses, three times a day, before the taking of the respective meals.

As to the local treatment, years ago he used with success, in these cases of irritable bladder and urethra, a strong solution of nitrate of silver, injected into the organ, the resulting pain being held in abeyance by the use of large doses of morphia. Coupled with this forcible dilatation of the urethra for fissure came into vogue, and in some cases seemed to answer a good purpose. Wherever a state of tissue tension exists and free drainage is desirable, the stretching process is an admirable therapeutic adjunct, and is a preliminary measure to the treatment to which the author now resorts. The patient is placed in the elevated dorsal position, advised by Kelly, in exploring the bladder and catheterizing the ureters. After quickly mopping out the residual urine, if there is a hyperemic or analogous condition of the trigonal region, he applies at once, on the most dependent portion of that region, from a long-pointed syringe, a few drops of a ten or fifteen per cent. solution of potassa permanganate. Preliminary to this, however, he uses a ten per cent. solution of cocaine with which to dilate the urethra, a few drops of which introduced into the bladder serves to obtund in some measure the sensibility of its mucous lining. In cases where the whole tract from that point to the meatus is in an evident state of irritation, either with marked hyperemia or in an eruptive condition, he quickly swabs the pendent area of the bladder with cotton on a screw applicator, soaked in the permanganate solution, and, making sure that there is no sharp point to the applicator exposed, with it draw the charged cotton out through the distended urethra, following in the tract of the withdrawn speculum. After the application of the permanganate to the urethra it is generally advisable to introduce, within a few minutes a large sized bouge, heavily coated with lanolin, especially on the end, so that the lubricant may adhere more abundantly and extensively to the urethral wall. Even in those cases of dysuria associated with eczematous and urticaria-like eruptions in urethra and bladder, he had recently found this treatment to be most effective.

"ULCERATIVE INFLAMMATION OF THE CORNEA."

By Dr. E. O. Sisson of Keokuk, Ia. The author first dwelt upon the etiology, and then passed on to the subdivisions of keratitis suppurativa. Symptomatology and complications were next considered.

With regard to the treatment of corneal ulcers, the author reiterated the methods laid down in the several text-books.

"PYLORECTOMY IN AMERICA."

Dr. Alex. Hugh Ferguson of Chicago, in an interesting paper, said the literature up to date only shows thirteen resections of the pylorus in this country, and of this number eight died, and five recovered. The first successful pylorectomy performed in this country was by Dr. Wm. T. Bull of New York. The proportion of deaths immediately following the operation, places shock as the most prominent cause. In none of the cases reported is the nature of the shock stated, that is, whether it was manifested by marked cardiac inhibition, nervous depression, or excitement. The author then reported a case upon which he had successfully operated.

He is strongly in favor of encouraging pylorectomy for carcinoma of the pylorus, for the following reasons: (1) Medical treatment offers a mortality of one hundred per cent. within twelve or eighteen months. (2) Pylorectomy promises (*a*) a possible cure. In 19 per cent. of over nine hundred cases dying with cancer of the pylorus, no adhesions whatever were found after death; starvation took place before the carcinoma had reached the peritoneum. There would be good prospects of curing most of these. (*b*) Recovery from the operation in about 50 per cent. Death occurs in 43.7 per cent. while the disease is still local, *i.e.*, no secondary deposits, or extension beyond the pylorus. Surely some of these could be saved. (*c*) A still less mortality with early operation. By timely

interference many cases could be saved that now go on to secondary infection, and are doomed.

To secure the best possible results, shock must be anticipated and measures taken to prevent it. In addition to the hypodermic injection of strychnia, before the operation is commenced, the author is convinced, from a large experience in major work, that when the patient is placed on a hot water bed during the operation, that shock, which otherwise would have been pronounced, is in many cases altogether prevented. He feels certain that this precaution was a material contributing element to the success of his pylorectomy case.

After opening the abdomen, he recommends the performance of pylorectomy thus: (1) Liberate the duodenum from the pylorus, unite its distal cut end to the posterior surface of the stomach with Murphy's button, and invert the proximal cut end toward the pylorus and close with sutures. The great advantage of completing the gastroduodenostomy first, is that the operation can be safely stopped at this stage, should the patient show signs of weakening, the abdomen at once closed, and the removal of the pylorus left for a second operation. (2) Separate the stomach from the pylorus and close it rapidly with sutures. Should the patient now present alarming symptoms, the surgeon should again cease operating and leave the pylorus *in situ* in the meantime. It would, of course, be necessary to fasten it in the abdominal wound and drain it externally, which, however, would only facilitate its extirpation at another time. (3) Remove the cancerous pylorus. Spend no time in trying to use interlocking ligatures, but apply forcep after forcep and cut the mass away. This done, the application of ligatures can be executed more expeditiously.

"LOCAL TREATMENT OF THE EYE"

Was the title of a paper read by Dr. Dudley S. Reynolds of Louisville, in which he said that the local treatment of the eye was as much in need of reform and readjustment as in any other department of surgery, for there had been little change in prevailing customs for nearly a hundred years. It seems to him that it is rational for practitioners to get out of the nitrate of silver path of destruction and quit furnishing the aid of cauterization to the less destructive processes of a surface inflammation. Boric acid will protect abraded surfaces against the ordinary dangers of infection; cocaine will allay local irritation; and so these may be appropriately prescribed in every case of pain in the eye from foreign bodies. The yellow oxid of mercury he considers valuable as a local application in nearly all forms of ulceration or abrasion of the cornea and conjunctiva. The tension of the eyeball must be noted in every case of injury, and if found slightly increased, a solution of eserin should be instilled, a saline purgative administered, and if the increased tension be accompanied by sense of pain on pressure upon the globe, it is best to begin with salicylate of sodium or ammonium at once. Hot ablutions are often of great value in cases of irritation of the iris and ciliary body, whether due to constitutional or local causes. In cases of contusion, and in those cases of extravasation of blood from sneezing, lifting heavy bodies, and from various causes of rupture of small blood tubes, a solution of muriate of pilocarpin promotes rapid absorption of effused fluids. This may be instilled into the eye or injected under the retrotarsal conjunctiva in doses too small to perceptibly affect the heart.

DISCUSSION.

DR. FRANK ALLPORT of Minneapolis, thought that Dr. Reynolds had struck the keynote in certain phases of ophthalmic practise, in that he strenuously advocated the harmless treatment of the eye. He had seen so many instances of eyes that had been injured along the line indicated by Dr. Reynolds that the paper appealed to him very strongly. The longer he practises ophthalmology the more he feels the necessity of using mild and uninjurious remedies. He could not but believe that remedies, such as the doctor had indicated in his paper, that actually produced irritation of the conjunctival surface, or of the epithelium of the cornea, could be other than extremely injurious in cases of acute inflammation.

DR. WM. H. WILDER of Chicago, could not agree with the essayist, when he thinks that we should abolish the use of the stronger remedies in the treatment of diseases of the eye. They certainly have their use, and particularly in infectious cases, as gonorrhœal ophthalmia, whether in the newborn or in the adult. The severer cases of trachoma should be handled without gloves. It is true, their treatment requires skill, but there is no reason why the general practitioner should not familiarize himself with the methods necessary for the treatment of all of these cases.

"OBSERVATIONS ON SOME CRITICISMS OF SERO-THERAPY."

DR. PAUL PAQUIN of St. Louis, Mo., read this paper. No department of therapeutics has called forth so much criticism as sero-therapy. These criticisms have been of two kinds—those based on scientific problems of biology, and secondly, those based on clinical effects and results. The author considered these separately at length.

To show the most deleterious results of sero-therapy, injudiciously applied, the author had conducted experiments in animals and man, and analyzed the results. In a rabbit, in good health, the number of red blood corpuscles, per cubic millimeter, were 5,800,000. He injected 4 c.c. of pure horse-blood serum immunized, and three hours later the red blood corpuscles were counted again, and they had dropped to an average of 3,900,000 per c. m., a loss of 1,100,000 per c.m. of blood. Eight hours later, 3 c.c. more of pure blood serum of another horse was injected, and within four hours the red blood corpuscles had been reduced to practically 2,800,000 per c.m., or 3,000,000 less than before any injection. At the same time the leucocytes had increased in large numbers. Practically, the same results were obtained in a man, thirty-five years of age. The number of red blood corpuscles averaged 4,400,000 per c.m., before injecting pure horse-blood serum. Ten c.c. were injected in one dose, the patient never having received it before. Four hours later the red blood corpuscles averaged 3,800,000 per c.c. Six hours later they averaged 3,000,000. Again, in this instance, the white cells were enormously in

creased. In the experiments, both in man and animal, in which the blood cells were diminished largely in number, the temperature declined slowly below normal, and there were pronounced symptoms of depression.

A phase of criticism is based on the idea that in using serum, some fatal, or at least dangerous animal diseases, such as glanders and tuberculosis, may be transmitted to man. This is well founded. Glanders has thus been transmitted, if we are to believe the reports of the press, but this danger can be easily avoided. As to the beneficial effects of serum, these depend unquestionably, in a great measure, upon increased phagocytosis. The serum increases the white cells, whose duty it is in part to destroy micro-organisms in tissues and their toxins, probably by a process of cellular digestion, or rather a diastatic neutralization. In a tuberculous man of thirty-five years, in which the white cells were less than 16,500 per c.m., they were increated to over 40,000 in seventeen days by the daily injection of 2 c.c. of antitubercle serum. The author obtained a similar result in a rabbit, in which he had injected Roux antitubercle serum daily for three days, the dose being 1 c.c.; also with other serums in other small animals.

"THE RELATIONS WHICH SHOULD EXIST BETWEEN OCULISTS AND OPTICIANS."

By Dr. Frank Allport of Minneapolis. He advanced strong arguments in favor of licensing opticians to fit glasses. The fitting of glasses was not a trivial affair, but necessitated, in many instances, a thorough examination of the eyes by a properly equipped, specially trained, medical practitioner.

DISCUSSION.

Dr. Dudley S. Reynolds of Louisville, said it frequently happens that a neurotic person consults the ophthalmic surgeon with two or three, or perhaps half a dozen pairs of spectacles in his possession, and on suspending the accommodating power of the eye and testing the state of refraction no glasses are needed.

Dr. Ryan of Galesburg, said that every practitioner, who is doing more or less ophthalmic work, had seen evidences of the injury done by traveling opticians and spectacle venders. Every general practitioner should look at the eye, not as a machine, but as an organ which performs a general physiological function.

Dr. R. Harvey Reed of Columbus, O., said that legal measures would soon be enacted in Ohio to prevent the optician from encroaching upon the field of the ophthalmologist. The instrument makers would also be included if the bill should become a law.

The subject was further discussed by Drs. Wilder and Hale of Chicago, and Dr. Ball of St. Louis.

"THE OPERATIVE TREATMENT OF JACKSONIAN AND FOCAL EPILEPSY, AS ILLUSTRATED BY SELECTED CASES."

Dr. Chas. B. Nancrede of Ann Arbor, Mich., read this paper. The cases reported by the author demonstrated what has been the experience of Horsley, Keen, and other surgeons, namely, lack of permanency in results. The great difficulty is a reliable method of preventing adhesions. The removal of the lesion in cortical and Jacksonian epilepsy can only be regarded as palliative. The earlier the operation is done after the disease has become established, the longer the immunity. It is possible that if trephining is resorted early, the operation, in a few instances, might prove curative, if a reliable method is devised to lessen the inevitable scar and to prevent adhesions between the membranes and brain, Operation is not dangerous in competent hands, especially when performed early.

"SOME NEEDED REFORMS IN MEDICINE."

This was a public address delivered (by invitation) by Dr. Joseph M. Mathews of Louisville, Ky. He first dealt with specialism, according all honor to the specialist. Professors in medical colleges should educate students that the great object in medicine is to practise it; and yet we find blooming into special lines of work every day all over the Union, both in the city and country; young men, without any special preparation either for surgery or for any other particular line of medical work, setting themselves up as learned men in special departments. The profession should call a halt. It should be impressed upon the minds of students that thorough preparation is necessary in order to be a specialist, and unless this is done, specialism would be brought into disrepute. No man can be a specialist in any department who has not fitted himself and had experience in the general line of practise. Reform was needed in the appointment of medical men to fill places in medical institutions, such as asylums, etc. Too often petitions were circulated and signed in favor of this and that man, without taking into consideration professional qualifications.

EXPERT TESTIMONY

Should be raised to a higher plane, and those who testify as experts should receive adequate compensation therefor.

ATTENDANCE AT MEDICAL SOCIETIES.

In the State of Kentucky there are four thousand registered practising physicians. Of this number, about four hundred belong to the State Medical Society. Dr. Mathews believes that this small membership obtained proportionately in other States. The live, busy, energetic, and most eminent practitioners attended medical societies.

CONSULTATIONS.

The old rule that applied to consultations does not hold good to-day. Specialism was not known until recent times. There has been a change in the order of things, and practitioners of medicine have to meet the issue just as it is. To-day a patient either belongs to the physician or to the specialist, and not to both alike. When a specialist recognizes that a patient does not require his special attention, he should call a physician. Per contra, when a physician recognizes that a patient needs special attention, he should give the patient to the specialist.

Dr. Mathews then strongly condemned the endorsement by medical men of preparations, the compositions of which they know comparatively nothing. A reform was absolutely indispensable in this regard.

CODE OF ETHICS.

This document needed no defence from him, as it

stands open to the world. He did not believe there was a man or woman in the profession who could raise any objections to what is taught therein. The perfect gentleman, however, in his professional relations could control his actions without the code, and act with honesty toward his fellowmen, at the same time there is nothing in the code to which honorable men could object.

QUACKS.

The State Board of Health of Kentucky had succeeded in driving out of the State within the last two years over 860 charlatans. How was this accomplished? By the concerted action of the medical profession and the representatives in the State Legislature.

Dr. Mathews then paid an eloquent tribute to the good work that had been done by the Illinois State Board of Health.

DR. R. HARVEY REED of Columbus, contributed a paper entitled

"SOME PRACTICAL REASONS FOR EARLY OPERATION IN APPENDICITIS."

(*To appear shortly in the* MEDICAL NEWS).

DR. GUSTAV FUETTERER of Chicago, described a new method of treating gonorrhœal infections of the knee-joint, in which he had successfully used injections of oil of sandalwood. He employs the best preparation of this kind made.

CLINICS.

A clinic was given at the Post-Graduate Medical School by Dr. J. B. Murphy before the members of the society. Dr. Murphy did a cholecystotomy in one sitting.

At Rush Medical College clinics were given by Dr. J. H. Etheridge and Dr. Fernand Henrotin. Dr. Etheridge did a laparotomy for hydrosalpinx on one side and pyosalpinx on the other, while Dr. Henrotin performed a vaginal hysterectomy for malignant disease.

Dr. Nicholas Senn, at his usual Thursday afternoon clinic in Rush Medical College, exhibited several patients upon whom he had previously operated for peritoneal tuberculosis, these cases beautifully illustrating the varieties of this affection. He next showed and expatiated upon the following cases upon which he had operated: Tubercular appendicitis, tubercular perichondritis, several cases of tuberculosis of the cervical glands, sarcoma of the breast, tubercular synovitis of the knee-joint; pyloric stenosis, pseudo-leukemia, a case of hernia operated on by the Bassini method; tubercular osteomyelitis implicating the phalanges of the toes; penetrating gunshot wound of the knee-joint, etc., etc.

The following officers were elected for the ensuing year:

President—Dr. A. H. Cordier, Kansas City, Mo.

First Vice-President—Dr. Hugh T. Patrick, Chicago, Ill.

Second Vice-President—Dr. H. C. Eschbach, Albia, Ia.

Secretary—Dr. Geo. W. Cale, St. Louis, Mo.

Treasurer—Dr. C. S. Chase, Waterloo, Ia.

St. Louis was selected as the place of the next meeting.

OBITUARY.

DR. JOHN F. MCKENZIE died at Leroy, Ill., April 13th, of a cancerous affection of the bowels. He was fifty-three years old. He was a native of Kentucky, a cousin of Vice-President Adlai E. Stevenson, and brother of James McKenzie, Minister to Peru. Dr. McKenzie was superintendent of the asylum for the insane at Jacksonville, Ill.

ON the 16th instant Dr. A. L. Williams of Brookfield, Conn., was struck and killed by a train. Dr. Williams was the oldest practising physician in his State, and had continuously practised in Brookfield for sixty years.

DR. WILLIAM SHARP died in Wales two weeks ago. Dr. Sharp was an original investigator, and it was owing to his influence that physical training was introduced in the public schools of England. He began the study of medicine in Guy's and St. Thomas' hospitals in 1825, under Sir Ashley Cooper.

DR. JOHN J. DALY of Rahway, N. J., died on April 14th. Besides acquiring a high degree of success and an enviable reputation in his profession, Dr. Daly had acted as a reform mayor of his city during five terms.

DR. WM. HUNT, for many years a well-known, able, and conservative surgeon, died at his home in Philadelphia on April 17th, after a somewhat protracted illness. He never entirely recovered from the effects of injuries received in being struck by a wagon some time ago. Dr. Hunt was born in Philadelphia on September 22, 1825, and at the age of twenty-one years entered the medical department of the University of Pennsylvania as a pupil of the late Dr. George B. Wood, and graduated in 1849. He was elected resident physician in the Pennsylvania Hospital in 1850, and in 1854 became Demonstrator of Anatomy in the University of Pennsylvania, continuing in this last position for ten years. In 1856 he was elected surgeon to the Episcopal Hospital and served in that capacity for more than twelve years. In 1863 he was elected surgeon to the Pennsylvania Hospital and held that position until 1893, when, in accepting his resignation, the Board of Directors adopted a resolution expressive of their appreciation of his services during the period of his more than forty-three years' continued connection with the hospital. Dr. Hunt was also, at different times, surgeon to the Orthopedic Hospital and to Wills Eye Hospital. During the Civil War he served as an acting assistant surgeon in the United States Army. He was a trustee of the University of Pennsylvania, a Fellow of the College of Physicians of Philadelphia, a member of the Philadelphia County Medical Society, and of the Philadelphia Academy of Natural Sciences, ex-President of the Philadelphia Academy of Surgery, and Honorary Fellow of the American Surgical Association. During the active period of his career Dr. Hunt made a number of valuable contributions to medical literature. He was joint author of an elaborate paper descriptive of "Surgery in the Pennsylvania Hospital: Being an Epitome of the Hospital since 1856."

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ORIGINAL ARTICLES.

REPORT OF A CASE OF INDIGENOUS PARASITIC CHYLURIA WITH FILARIA NOCTURNA IN THE BLOOD.[1]

BY FREDERICK P. HENRY, M.D.,
OF PHILADELPHIA;
PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE IN THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.

Fanny B., married, aged twenty-nine, was born in Columbia, S. C., and spent the first twenty-seven years of her life in that town. Her twenty-eighth year was passed in Palatka, Fla., and her twenty-ninth in Philadelphia, where she arrived in March, 1895. Her father died from sunstroke, and her mother, for several years before her death, suffered from "shingles"—herpes circinnatus.

She had the usual diseases of childhood, except scarlatina. At the age of twelve she fell from a fig-tree, and soon after developed a large abscess in the left lumbar region, the site of which is plainly indicated by a cicatrix about three inches long, a little above and parallel with the posterior portion of the crest of the ilium. This abscess continued open for several months, but finally healed. A year after its closure another abscess appeared in the left iliac region, and also pursued a chronic course. Its site is indicated by a linear cicatrix, about two inches long, a little above and parallel with Poupart's ligament. The patient suffered from what she vaguely described as an attack of malarial fever in March, 1895, but never manifested any signs of malarial infection while in the South. She has had two miscarriages: one at four months and a half; the other at two months. Both were ascribed to persistent vomiting. Three weeks before her admission to the Woman's Hospital of Philadelphia—she was admitted on February 16, 1896—she gave birth to a child at term. The labor was natural in all respects. Previous to the birth of her child she suffered from pain in the region of the kidneys. On the second day of her lying-in this pain became intense and continued for a week, when it abated somewhat. On admission it was still complained of. On the third day of her lying-in she passed milky urine, and had difficulty in micturition on account of the occlusion of the urethra with what she regarded as stringy masses of mucus. There were, in reality, coagula of lymph and blood. The urine, after standing for several hours in a narrow, cylindrical vessel, separates into two portions, of which the lower is distinctly hemorrhagic; while the upper, has the appearance of milk or cream. Floating on the upper chylous layer are numerous coagula of a delicate, pinkish hue, and almost translucent, while at the the bottom, are a few small blood clots. A little of the urine was shaken up in a test tube with ether and set aside until the urine and ether had separated. The latter being then evaported on a watch-glass, a distinct deposit of fat was obtained. The chylous urine contained a trace of albumin, but no sugar, and was free from casts.

I found this woman awaiting me at my clinic at the Woman's Hospital on Tuesday, February 18, 1896, and lectured upon her case as one of chyluria, probably parasitic. On the evening of February 19th I visited the hospital for the purpose of examining my patient's blood for the filaria sanguinis, taking with me a small microscope and making the search with a half-inch objective. I withdrew the blood from the finger about 10 P.M., and examined several slides without finding the parasite. I left the slides at the hospital, and after my departure one of the resident physicians, Dr. Ida E. Blackburn, examined them with a stronger lens, and fortunately succeeded in detecting the filaria. Since then filariæ have been found in almost every slide examined. They are not numerous, the maximum number observed on a single slide being five. The urine was repeatedly examined, the centrifugal machine being used to separate the parasites, but only on one occasion were they found in that fluid. With the specimen in which they were detected the centrifugal machine was not employed. The filariæ have not been found in the milk of the mother or in the blood of the infant, and they are very few in number or absent from the blood of the mother during the day. The variety present in this case is, therefore, the filaria nocturna, the embryo of an adult which is alive in one of the lymphatic channels.

The patient was put to bed, and frequent examinations were made of her blood and urine. She was at first placed upon quinin and ergotin, without any apparent effect, the urine continuing chylous and bloody, although in an intermittent manner. February 25th, I examined the blood, and found filariæ. I then directed leeches to be applied to the lumbar region, ostensibly to relieve pain, but in reality to test the question whether the leech might play the rôle of an intermediate host to the filariæ. Three of the leeches were sent to me the next morning. I opened one of the leeches at 10 A.M., and examined its blood. Filariæ were abundantly present—one slide contained six—and actively moving. The next morning (February 26th) they were still active. The same afternoon I found three dead filariæ on one

[1] Read at the meeting of the Association of American Physicians, at Washington, D. C., May 1, 1896.

of the slides, and but one still living and languidly moving. At the same hour the filariæ removed directly from the body were all living. On February 29th I opened another leech, and found a number of dead filariæ in its blood—none living. It appears evident, therefore, that although the filariæ may live many hours in the body of the leech, that animal does not play the part of an intermediary host to them.

February 28th, the patient was placed upon thymol (gr. ii. every three hours), and coincidently with its administration, the urine became normal in every respect, and so continued for seven days, when it again became chylous and bloody. The filariæ during this interval were abundantly present in the blood.

March 12th, I ordered methylene blue in two grain capsules every three hours, being induced to do so by the remarkable statements of Dr. Austin Flint, concerning the efficacy of this substance in a case of parasitic chyluria.[1]

March 13th, I found Mrs. B. out of bed and dressed. Her appearance was good, her lips and cheeks being well-colored; urine deep blue; eye-ground examined by Dr. Gertrude A. Walker, ophthalmologist to the hospital, who confirmed my observation as to the abscence of any morbid appearance in the retina. Patient anxious to go home, but persuaded to stay another week.

On Saturday evening, March 14th, I obtained some blood from the finger as usual, and examined it the next morning. I had scarcely placed the first slide under the microscope when I detected two filariæ (in the same field) moving with the greatest activity. I was unable to perceive that the filariæ were stained in the slightest degree by the methylene blue which the patient, at the time the blood was withdrawn, had been taking continuously for seventy-two hours. Her urine and feces were stained a deep blue, but *the milk was uncolored.* Thus far I find no corroboration of Flint's statement that methylene blue stains the filariæ in the circulating blood, much less that it exerts any deleterious influence upon them. My experience, although differing from that of Flint, in this matter, is precisely in accord with that of Laveran,[2] who found that the filaria perished a few seconds after it was brought into contact with a drop of a solution of quinin, of the strength of 1–1000, while methylene blue (strength of solution not stated) does not hasten their death, and does not stain them until they are dead.

March 17th, Mrs. B. came downstairs to my clinic at the Woman's Hospital; specimen of her urine, deeply stained with methylene blue, exhibited. Blood was withdrawn from her finger at one o'clock, and seven slides prepared. These were repeatedly examined by myself and an assistant, the result being that two filariæ were found in the seven slides. This is the third time in which the blood has been examined by day, namely, once before at one o'clock, when no filariæ were found, and once at 8 A.M., when only one was discovered. It is evident that the parasites are much less numerous in the superficial capillaries by day than by night. This is the sixth day since the treatment with methylene blue was instituted, and the results, thus far, are by no means encouraging. The drug appears to be absolutely inert, so far as concerns the destruction of the filariæ. Different opinions as to whether or not the filariæ were stained, were expressed by those who saw the specimens. The majority thought they were not, but being on the lookout for such staining, I *fancied* that they had a faint bluish tinge.

March 19th, at one o'clock, the patient having been taking methylene blue (two grains every three hours) for one week, I counted the blood corpuscles. Number of red corpuscles per cubic millimeter, 4,100,000; white not increased in number and *unstained.* Hemoglobin, sixty-five per cent.

Five slides of rapidly dried blood were prepared, and no filariæ found. It is a singular fact that the previous day, while the patient was taking the methylene blue as usual, the urine suddenly became quite clear and macroscopically normal.

I gave two slides of blood to Dr. Alfred Stengel, of the Pepper Laboratory of Clinical Medicine (University of Pennsylvania), in order to obtain his opinion as to whether or not the leucocytes were stained with the methylene blue, which the patient had been taking continuously in full doses for more than one week at the time the blood was withdrawn. Dr. Stengel reported that he could find no evidence of blue discoloration of the corpuscles.

March 20th, at nine o'clock in the evening, I prepared a number of slides. The filariæ were abundantly present. I found them in eighteen out of twenty-one preparations, and, as I did not use a mechanical stage, it is possible that I may have overlooked them in the three slides, in which the search was ineffectual. The serum of the blood was decidedly blue, and the filariæ of an exceedingly delicate bluish tinge. The methylene blue had been taken by the patient continuously in full doses for nine days and had proved absolutely inert, so far as any influence upon the vitality of the embryos is concerned.

March 21st, the patient returned to her home.

I omitted to state that shortly after the patient's admission I had her vaccinated on the theory that an intercurrent infection might destroy the parasite. The vaccination was perfectly successful, but quite as useless from a therapeutic standpoint as the methylene blue.

The above case is of special interest both because it is the first of the kind observed in Philadelphia, and also for the reason that it adds another to the list of those indigenous to the United

[1] *New York Medical Journal*, June 15, 1895.

[2] *Bulletins et Mémoires de la Soc. Méd. des hôpitaux de Paris*, 3 série, tome x, p. 738.

States. It is impossible to say how long the filarial embryos have been circulating in the blood of this patient, but it is in the highest degree probable that the infection occurred either in South Carolina or Florida, and it is not impossible that the lumbar and inguinal abscesses, from which she suffered at the age of twelve, were due to the filariæ. Similar abscesses form part of the clinical history of filariasis. The exciting cause of the chyluria was probably the rupture of a dilated lymphatic during the expulsive pains of labor. The supposition that infection occurred at the age of twelve or earlier necessarily implies the circulation of the embryos in the blood for many years without giving rise to symptoms. In connection with this question of the innocuous presence of the filariæ in the blood of men the following case is of interest:

In the autumn of 1893, a well-known physician of Philadelphia consulted me about his son-in-law, who had resided for some years in Columbia, S. C., and latterly near Tampa, Fla. Filariæ were said to have been found in his blood by de Saussure of Charleston. Up to the time I speak of the symptoms had been those of intestinal indigestion, consisting chiefly of great abdominal distress, meteorism, irregular action of the bowels, great nervous excitement at times, *especially toward evening*. I examined the patient's blood in vain for the filariæ, and Professor Guiteras, who examined it twice, was equally unsuccessful. The time of my examination was about 10 P.M., and I have since thought that my failure to detect the parasite may have been due to the fact that the patient walked to my office. The gentleman in question returned to his home in Florida, and a few months later passed chylous urine for the first time. The chyluria continued for one or two months, and has not returned. Of late the patient has been in a fair state of health, and free from the intestinal symptoms above-mentioned.

Post-mortem examination, of those who have perished from parasitic chyluria, has revealed enormous distention of the lymphatic vessels of the urinary tract, and sometimes also of the thoracic duct. A few months ago, I exhibited before the Philadelphia County Medical Society a specimen of chyluria from a Cuban, whose blood I vainly searched for the filaria. I had but one opportunity of examining the blood of this man, and for that I was indebted to Dr. Charles W. Coburn, who was in attendance upon the case. Shortly after my examination the man died and an autopsy was held under very unpropitious circumstances. There was, however, no difficulty in ascertaining that the lymphatic vessels, especially those of both renal regions, were enormously dilated and convoluted, many of them being of the caliber of an ordinary lead pencil. The dilatation was most marked on the right side, and in the pelvis of the corresponding kidney there was a pale lymph clot similar to the coagula passed with the urine during life. In this case it is greatly to be regretted that a careful dissection with a view to the detection of one or more of the adult filariæ was not possible. The time at our disposal was limited, and the light was derived from a single lamp which was held by turns by Dr. Coburn and myself, the autopsy being skilfully performed by Dr. Bundy of the Woman's Medical College of Pennsylvania.

The importation of a case of filariasis into a city of the latitude of Philadelphia naturally raises the question whether the disease may become endemic therein, and there seems to be no good reason why it should not. The brilliant researches of Dr. Patrick Manson have established the fact that the mosquito plays the part of an intermediary host in conveying the *filaria nocturna* from man to man. At night the embryos swarm to the surface, while during the day they retire to the deeper vessels. Acting upon this knowledge, Manson exposed a filaria patient to the bites of mosquitos, and found the embryos in the bodies of these insects, in which, in the course of from five to seven days, they attain a length of one-fifteenth of an inch. In the blood of man, they measure from $\frac{1}{70}$ to $\frac{1}{80}$ of an inch, and are enclosed in a sheath, from which they make their escape in the viscid blood of the mosquito. The mosquitos with the embryonic filariæ in their interior seek water in which to deposit their eggs. This function accomplished, they perish; the embryonic filariæ are liberated, and, through the medium of the water in which they exist, gain access to the human system. One or more of the ingested parasites attains maturity in the lymphatic system and continues for an indefinite period (in some cases for many years) to produce swarms of embryos. The latter being but $\frac{1}{3500}$ of an inch in diameter, readily traverse the lymphatic glands, and reach the blood vessels via the thoracic duct. It is through the plugging of the lymphatic vessels, especially those connected with the urinary tract, that the lymph and chyle become mingled with the urine. For further details concerning the life history of this parasite, and the mode in which it occludes the lymph channels, the reader is referred to the writings of Manson.[1]

[1] Especially the articles in Davidson's "Hygiene and Diseases of Warm Climates"; *International Clinics*, April, 1895; "Transactions of the International Congress of Hygiene and Demography," Seventh Congress, 1891.

In Philadelphia, mosquitos are abundantly present during the summer and autumn, and have convenient access to the Schuylkill River, from which our water supply is derived. The chance of a given individual becoming infected through the medium of a river of the volume of the Schuylkill is doubtless infinitesimal, but no one acquainted with the wonderful vitality of the embryonic filaria can deny its possibility. The surest safeguard against this and other sources of infection is filtration.

The *filaria nocturna* is now known to be indigenous in Europe, as appears from the report of a case recently studied by M. Font of Spain.[2] The patient was a man, thirty-five years of age, who had resided all his life at Canet de Mar, with the exception of a short period passed at San Sebastian and Vitoria. Canet de Mar is a town of 5000 inhabitants on the shore of the Mediterranean, in latitude 41° 37′ north, between Barcelona and the French frontier, and is a favorite retreat for veteran sailors, many of whom have visited the West India Islands. Dr. Ballester, in a communication to Font, reports having seen in the same town two cases of hematochyluria during fourteen years, in neither of which was there an examination of the blood. In Font's case the presence of the *filaria nocturna* was repeatedly demonstrated.

Thus far three species of filaria have been certainly detected: (1) *Filaria diurna*, (2) *Filaria nocturna*, (3) *Filaria perstans*. These names are indicative of the habits of the animal, the *filaria diurna* being found in the superficial vessels solely or chiefly during the day; the *filaria nocturna* solely or chiefly during the night; while the *filaria perstans* is constantly present in the capillaries of the integument. The *filaria diurna* and the *filaria perstans* are confined, thus far, to the west coast of Africa and adjoining districts; while the *filaria nocturna* is pandemic in the tropics and endemic in certain sections of the United States. The adults of *filaria nocturna* have been frequently found; that of *filaria perstans* never, so far as I have been able to ascertain. In the opinion of Manson, the *filaria loa* of the eye of the negro of Old Calabar is probably the adult form of the *filaria diurna*. If it is not, he argues, then there must be another blood worm yet to be discovered, for the embryos of the *loa* must escape from the body of their host through the medium of the circulation. The *filaria perstans* has been practically proved by Manson to be the cause of the fatal "sleeping sickness" of the Congo region.

While engaged in writing this article my attention was called by Dr. Charles A. Oliver of Philadelphia, to a remarkable case of *filaria loa*, recently reported by Dr. Argyll Robertson. The patient was a lady who had spent eight years in missionary work at Old Calabar on the West coast of Africa. Without entering into the details of this interesting case I will merely state that in two successive operations Dr. Robertson extracted two *filariæ* (variety *loa*) from the ocular tissues, the first a male, the second a female. Both of these adult parasites are described by Manson in the course of Robinson's paper. The female was stuffed with embryos, but repeated examinations of the blood failed to detect any embryonic filariæ in that fluid. The latter fact certainly seems to refute Dr. Manson's hypothesis that the *filaria loa* is the adult form of the embryonic *filaria diurna*.

In a letter recently received from Dr. Manson, he says that America possesses the

> "unenviable distinction of possessing a filaria of the blood, which is possibly peculiar to itself. I found it in negroes from the island of St. Vincent, and I have little doubt but that it could be found in the negroes of the more tropical States of the Union. This filaria I have named *Filaria Demarquayi*, after Demarquay, the discoverer of *filaria nocturna*. It is a very small worm, not half the size of the filaria you are familiar with. It observes no periodicity; it is sharp-tailed, and it possesses a sheath," etc.

This *Filaria Demarquayi*[1] should, therefore, be added to the list above given, so that, at the present time, there are four distinct varieties of *filaria sanguinis hominis*.

The steps by which our present knowledge of the *filaria nocturna* has been obtained were gradual. The embryo was first discovered by Demarquay in 1863 in the liquid of a chylous hydrocele; next, in the blood by T. R. Lewis of India, in 1872. In 1876, the adult parasite was found in a lymphatic abscess of the arm by Bancroft of Brisbane, Australia, and is accordingly, known to helminthologists as the *filaria Bancrofti*, this name having been assigned to it by Cobbold. Finally, our knowledge of the life history of the parasite has been completed by the genius of Manson. We are irresistibly reminded of the analogous history of the discovery of trichiniasis, with which the names of Hilton, Paget, Owen, Leidy, and Zenker are associated.

In the United States filariasis can no longer be

[2] *Revista de Ciencias Medicas de Barcelona*, 25 February, 10 Marzo, 1894.

[1] I would suggest that the last-mentioned parasite would be much more appropriately called *filaria Mansoni*.

considered as an extremely rare disease, and it is probable that it is more prevalent in certain of our Southern States than is suspected. Professor John Guiteras, of the University of Pennsylvania, was the first to demonstrate the existence of endemic parasitic chyluria in this country,[1] and de Saussure[2] of Charleston, has published the clinical histories of twenty-two cases of filariasis observed in Charleston, S. C., from 1886 to 1890. Two cases of filariasis indigenous to Virginia have been reported by Dr. R. M. Slaughter,[3] but in neither of them was the blood examined. In both there was hematochyluria and filariæ in the urine, and in one filariæ were found in the pus of an alveolar abscess. While I believe these cases of Dr. Slaughter to be genuine examples of filariasis, I cannot refrain from the criticism that the illustration accompanying his paper bears but a superficial resemblance to the embryonic *filaria nocturna*.

Another indigenous case is reported by Dr. C. W. Mastin of Mobile, Ala.,[4] the patient being a young man, age twenty-two, who had never been outside of Mobile and its immediate vicinity. In Mastin's case the filarious lesion was a chylous hydrocele. The filaria is also said to be have been found by Weiss in the urine of a child who had never been out of Illinois.[5] I am by no means sure that I have collected all the reported cases of indigenous filariasis; in fact, I have made no attempt to do so. Sufficient, however, has been said to show that the disease is widespread and not confined to tropical and sub-tropical regions.

In this connection I may remark that the embryonic *filaria nocturna* is capable of great resistance to cold. My slides, prepared in winter and kept in a cold room, showed the parasites active at the end of six or seven days; in fact, one lived for ten days. Exposure for many hours to a freezing temperature does not kill them, as proved by one of the methods employed by Manson to demonstrate "filarial ecdysis." This consists in placing the slide containing the filariæ upon a block of ice overnight, in order to cause a separation of hemoglobin from the red corpuscles. The effect of this degree of cold is to render the movements of the animal somewhat languid, but after withdrawal from the ice they become as active as before, and the embryos speedily escape from their sheaths.

[1] Medical News, April 10, 1886.
[2] Medical News, June 28, 1890.
[3] Medical News, September 5, 1891.
[4] *Annals of Surgery*, 1888, vol. 8, p. 320.
[5] *American Text Book of the Diseases of Children*, Starr.

Facts such as the above seem to prove that nothing but time is needed for filariasis, the scourge of certain tropical countries, to become prevalent in our own, and demonstrate the vital importance of municipal filtration of our water supply.

I have said little about treatment in the foregoing remarks because I do not believe there is any drug capable of destroying adult filariæ in the human system. Surgeon-major E. Laurie of Hyderabad, reports two cases which he believed to have been promptly cured by thymol,[1] the maximum dose being five grains twice daily. Walsh, of the general hospital of Calcutta, also reports success from the use of thymol. On the other hand, Crombie, of the same institution, has given two hundred grains of thymol daily in one case, and forty-five grains daily in another, without producing any effect upon the worms. As the latter justly remarks, "thymol is so exceedingly insoluble that it is improbable that any appreciable quantity of it left the intestinal canal."[2]

I consider it a very fortunate circumstance that the case of Fanny B. came under my observation at a time when I was able to secure the co-operation of such an expert in photomicrography as Dr. Charles Lester Leonard, whose arduous work has been pursued in the Laboratory of Hygiene of the University of Pennsylvania. The appended illustrations are all *photographs of the living parasite*, and this is, I believe, the first time in which the living filaria have been photographed under a one-twelfth oil immersion lens, or, so far as I am aware, under any. The representations are, therefore, absolutely accurate, and necessarily take precedence of any drawings of the living or photographs of the dead nematode. To show the fallacy of drawings, I may say that one artist pictured the worm with long cilia waving from its head, while another was unable to see anything of the sort in the same specimen. I may say, in this connection, that I am inclined to believe in the existence of such cilia, although they are not shown in the photographs; unless they are indicated by the blur in Fig. 5. The point I wish to emphasize is that nothing can be represented in the photographs that was not present at the time they were taken.

I may say also that I have been unable to detect the "cephalic armature" described by Manson, although the "pouting" movement of the head was plainly visible. In mentioning my inability to detect the cephalic spine, or fang, I have no intention to impugn the accuracy of

[1] *Lancet*, February 14, 1891.
[2] *Lancet*, August 13, 1892.

Manson's description. I attribute my failure entirely to my deficient training in this line of research.

In conclusion, I wish to express my thanks to Dr. Anna M. Fullerton, the distinguished physician in charge of the Woman's Hospital of Philadelphia, and to her assistants, Drs. Blackburn and Carpenter, for their kind and skilful co-operation with me in my study of this interesting case.

Postscript.—I visited Fannie B. at her home on March 25th, and found her in good condition. she informed me that since leaving the hospital, her baby's feces have been stained blue. She is taking ten grains of methylene blue daily—two grains every three hours.

March 28th, patient's milk now faintly stained blue. Treatment continued,

March 29th, visited the patient this evening and prepared eleven slides, in every one of which I found filariæ in most active movement. She has now been taking methylene blue since March 12th. From the 12th until the 21st, the dose was two grains every three hours—sixteen grains per diem—and from the 21st until the 29th, it has been ten grains a day, in divided doses of two grains. The drug, in this case, has proved absolutely inert. The patient's urine is deeply stained, and her milk very slightly stained. The baby's fecal discharges are blue, and his urine also of a faint bluish tint. Filariæ of a very faint bluish tinge. Leucocytes unstained. A few filaments of cotton on the different slides were stained of a faint bluish tint by the blood plasma with which they were in contact.

From the above it is manifested that my experience with methylene blue in parasitic chyluria is entirely different from that of Austin Flint and Joseph N. Henry.[1]

The latter in his report to Flint says:

"The effects of methylene blue in this case were decided and prompt. After the administration of two grains every two hours during the day on March 5th, the parasites were very few at 11 P.M.; the only two found were deeply stained with blue, and their movements were extremely sluggish, the urine being clear but intensely blue. On the fourth and seventh days no parasites were found, although the treatment had been discontinued after the first day. On the eighth day, the urine became milky, and on the night of the ninth day, filariæ were found in great number, but their movements were not very active. On the tenth day, the treatment was resumed, and continued for five days. Three days after, the blood being examined at night, a very few motionless filariæ were observed. Since that time and up to the present writing, the urine has been normal and the patient has been restored to perfect health."

Admitting the disappearance of the parasites in Joseph N. Henry's case, I believe it to have been a mere coincidence and in no way related to the administration of methylene blue. I have given this drug in larger doses than were used in the case reported by Flint, and for a much longer period, without the slightest effect upon the parasite.

[1] *New York Medical Journal*, June 15, 1895.

Explanation of the Accompanying Plate.

Fig. 1.

The movement of a single filaria during a series of four successive instantaneous exposures. The length of each exposure was one-fifth of a second, the entire series occupying less than five seconds. The magnification is to eight hundred diameters, with a Zeiss one-twelfth homogeneous immersion lens.

Fig. 2.

Filaria alive in the blood. Instantaneous photomicrograph. Four hundred diameters magnification. Four millimeters Zeiss apochromatic.

Fig. 3.

The same as Fig. 2. Magnified to fifteen hundred diameters. Showing structure and commencing granular degeneration.

Fig. 4.

Tail of filaria showing sheath extending beyond the apparent end of the tail. Eight hundred diameters.

Fig. 5.

Head of living filaria. The blur in front of the head is probably due to the motion of cilia. Fifteen hundred diameters.

Fig. 6.

Shows the head of a filaria overlapping a red corpuscle. The appearance might readily be mistaken for the cephalic end of a sheath. Magnified eight hundred diameters.

THE USE OF THYROID EXTRACT IN CONDITIONS OF LOWERED VITALITY OTHER THAN CRETINISM AND MYXEDEMA.

By HENRY M. FISHER, M.D.,
of Philadelphia.

The very remarkable results obtained by Professor Schiff and Dr. Van Eiselsberg by implantation of portions of the thyroid gland in the bodies of animals upon which thyroidectomy had been performed, inspired Mr. Victor Horsley[1] with the idea that myxedema in man could also be so treated.

The suggestion made by Mr. Horsley was acted on by Lannelongue in Paris and Bettencourt and Serrano[2] in Lisbon, who undertook the actual implantation of the sheep's thyroid beneath the skin of the human subject for the relief of myxedema.

Later injections of fresh thyroid juice were practised with success for the relief of the above disease by Messrs. George R. Murray[3] and Hurry Fenwick.[4]

Feeding with fresh sheep's thyroid glands was found by Dr. Hector W. G. Mackenzie[5] to give equally good results and finally various preparations, liquid and solid, of an extract of the fresh sheep's thyroid have been used.

[1] *British Med. Journal*, February 8, 1890.
[2] *La Semaine Médicale*, August 13, 1890.
[3] *British Med. Journal*, October 10, 1891.
[4] *Ibid.*
[5] *British Med. Journal*, October 29, 1892.

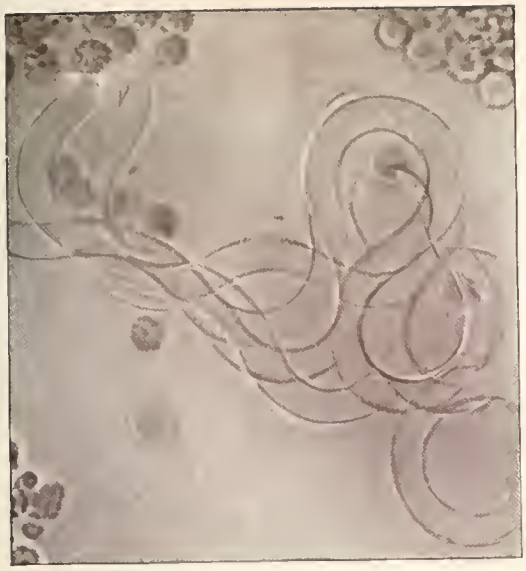


Fig 2

Fig 5.

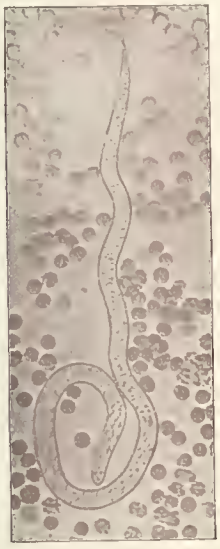
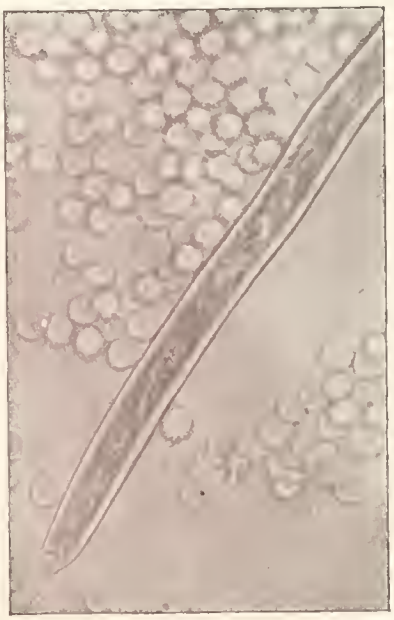


Fig 3.

Fig. 6



Having observed desquamation of the skin, especially on "the palms of the hands and soles of the feet" resulting from the administration of thyroid juice "in all cases of myxedema and sparodic cretinism, in which he had the opportunity of carefully following the effects of the treatment;" Dr. Byrom Bramwell[1] decided to try thyroid feeding in the treatment of psoriasis, and, in three cases (one of six and a half years' duration) the treatment was entirely successful.

Since that time many practitioners have tried the remedy for psoriasis and other forms of skin disease and also in secondary syphilis.

Dr. J. Duncan Menzies[2] reported marked improvement after the administration of thyroid extract in four cases of "malignant Indian syphilis," which had been slightly, if at all benefited by the usual anti-specific remedies. Dr. P. S. Abraham, at a meeting of the Hunterian Society of London, in 1894, presented a case of lupus, which had been greatly benefited by the treatment. The same observer reported at a meeting of the Medical Society of London the effects of thyroid feeding on sixty-five cases of psoriasis. In only eighteen of these cases, however, was there marked improvement; in fifteen there was an actual increase in the eruption, and in twenty-eight "headaches, palpitations, tremors, neuralgic pains, dyspeptic symptoms, in short the various manifestations" of "thyroidism" were so soon complained of that the treatment had to be discontinued. He concludes that the treatment "has no constant effect in psoriasis." Numerous other observers have reported either negative or positively unfavorable results from the injection of the thyroid gland, or its extract, in cases of psoriasis.

The following single case appeared to me of sufficient interest to put on record, from its confirming the already published reports of the marked effect sometimes observed in the nutrition of the skin, in consequence of thyroid feeding. It will be observed that while the results obtained might at first have been attributed to the local measures adopted, in conjunction with the injection of the thyroid extract, the equally favorable result observed later, when no local treatment was used is evidence that the cure was largely due to the thyroid feeding.

Mrs. Mary F., aged forty-seven, consulted me March 6, 1895, on account of an ulcer in the sole of the right foot, from which she had suffered for four years. No history of previous illness. Patient suspected herself that the disease was due to infection from a child she had nursed, but as no history could be elicited of ulceration in other regions, or of other signs of constitutional infection and her youngest child (the ninth) was apparently perfectly healthy, I was inclined to look upon the case as one of simple ulceration caused by pressure. The ulcer was circular and rather superficial and covered with adherent crusts, in the removal of which its surface was found to be covered with small indolent granulations. Around the ulcer the skin was thickened and eczematous.

Ordered five grains of dried thyroid extract daily, dose to be increased in ten days to ten grains daily. March 31st, for the last ten days patient has been taking ten grains daily. The ulcer has changed decidedly in appearance, the edges being more ragged, but its surface is covered with larger and more luxuriant granulations. Drew the edges of the ulcer together with narrow strips of adhesive plaster and dressed with two per cent. carbolized water and dusted with equal parts of salicylic acid and zinc oxide powder. Patient says that she suffers occasionally from nausea after taking the extract, but she presents no symptoms of thyroidism, so the dose of the dried extract was increased to twenty grains daily. For the relief of constipation from which she complains a laxative pill was ordered.

April 21st.—Marked improvement; the ulcer now showing evident signs of healing. Twenty grains of the extract having caused symptoms of thyroidism, *i.e.*, faintness and excited action of the heart, patient had been obliged to reduce the dose of the extract, and for the past week has taken from two to three 5-grain tablets daily.

June 25th.—Soon after last visit ulcer healed entirely, and the skin of the foot became perfectly smooth, A week or two ago, however, the skin became again slightly ulcerated and an eczematous eruption appeared on the ring finger of the right hand. Ordered ten grains daily.

April 12, 1896.—Patient reports that for one month after her last visit she took daily the dose then ordered. At the end of that time she found that the ulcer had entirely healed and she has had no recurrence of it. It may be interesting to note that the patient, a very stout woman, has during the somewhat prolonged thyroid treatment, to which she has been subjected, observed none of the loss of weight, which has sometimes been observed as the result of thyroid feeding.

[1] Sixty-first Annual Meeting of the British Medical Association, *British Medical Journal*, October 28, 1893.
[2] *British Medical Journal*, July 7, 1894.

ROMAN FEVER is almost a thing of the past. From 650 in 1881, the deaths from malaria ran down to 254 in 1891, while for the last five years the average has been 149, the number in 1895 being 125. These figures are all the more significant in that the population of Rome has increased from 300,000 to 467,000 in fifteen years. An equally remarkable diminution has taken place in the death rate for all other infectious diseases, so that Rome, even in the traditional unhealthy season, is one of the most healthy capitals in Europe.

THE SURGICAL TREATMENT OF ROUND ULCER OF THE STOMACH AND ITS SEQUELÆ, WITH AN ACCOUNT OF A CASE SUCCESSFULLY TREATED BY LAPAROTOMY.

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AND
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SURGEON TO THE RANDALL'S ISLAND HOSPITALS.

(Continued from page 462.)

Prognosis.—The mortality which has followed laparotomy for perforated gastric ulcer is thus far about seventy-one per cent. If what has already been said of the value of early diagnosis and prompt operation needs further emphasis, it finds it here; for the table shows that more than half of all the cases operated upon in the first twelve hours recovered, the mortality being thirty-nine per cent., while of those operated upon from twelve to twenty-four hours after perforation, seventy-six per cent. died; and of those who came to operation after the first day, eighty-seven per cent. succumbed.

Treatment.—If perforation be suspected, and until a diagnosis is arrived at, nothing should be given by the mouth. This also means that lavage should in no such case be resorted to. By neglect of this latter rule, rupture of a weakened stomach, and extravasation of gastric contents into the peritoneal cavity, have been known to occur in two cases in this city. Unfortunately, perforation often takes place when the stomach is full. If such a condition is recognized, and the diagnosis of perforation is made, surgical interference is the more imperative. If in doubt, therefore, the patient should be kept quiet and in a horizontal position. If the symptoms of collapse or pain are urgent, such stimulants and anodynes as are needed should be administered by the rectum, or hypodermically, with the employment of external warmth, etc.

For the required laparotomy the incision is best made in the median line, and should be an ample one, that is to say, three to five inches long. If more room is required it can readily be obtained by a crosscut through either the right or left rectus muscle. An incision to the left of the median line has been advocated,[1] in order to render more accessible the cardiac end of the stomach. This, however, is better determined after the exploration has been made through the median incision.

[1] Morse, *Lancet*, 1894, i, p. 672.

The liver is to be lifted up by the hand of an assistant or by broad retractors, and the stomach gently drawn downward, and to one or the other side. Gentle squeezing of the organ will often expose the perforation by the escape of gas or fluid. If nothing is seen on the anterior surface, the lesser omentum is to be torn through at a thin place near the stomach (to avoid the colonic circulation), and the posterior wall explored, as much as possible. With the aid of a sponge on a clamp, through this same opening, the recesses of this cavity can be reached to search for extravasated fluid.

If any recent adhesions exist about the perforation it is wiser to separate them, after protecting, as far as possible, the adjacent parts by gauze or sponges, and thus to find and to suture the gap than to trust to the fibrinous closure. The pressure of the finger-tip will temporarily occlude the opening in the stomach until the protecting pads are arranged, if this has not already been done, and will also aid in safely applying the first occluding sutures. In three of the cases recorded in Table I, such fibrinous adhesions were left undisturbed. Two of these cases died, and at autopsy it was seen that the fibrin obscured the perforation, but did not really close it. The third case recovered—a result which might have been true of all three, had sutures been applied.[1]

The excision of the ulcer has been advocated by some. On the other hand, it has been objected, with much reason, that this is unnecessary, that it takes valuable time, that it makes a larger and more difficult opening to close, and that hemorrhage follows, which is very detrimental to the patient, and is often troublesome to check. In only three of the twenty-three successful cases was the ulcer excised. Of the remaining twenty, seventeen were sutured, Lembert style, while two of the others were tamponed, suture being impossible, and in the other case the fibrinous adhesions were not disturbed.

Lavage, through the perforation, as some have practised it, is inadvisable. Lavage, but not hyperdistention, after the operation, by the usual method, is advisable, not only to empty the stomach thoroughly, but also to test the security of the stitches. The stomach should be left empty, to avoid vomiting and all strain on the suture.

[1] The search for a perforated ulcer is not always easily made, and often demands considerable manipulation and time. Too often, from the lateness of the operation, the patient's waning strength will forbid its thorough performance. Twice has it happened to me to be compelled to desist from further exploratory effort, and to find only at autopsy, the sought-for perforation.
R. F. W.

In twelve of the successful cases, irrigation of the peritoneal cavity was resorted to. In eight cases no irrigation was employed, but the peritoneum, when soiled, was cleansed with gauze. As regards the fluid used for irrigation, it was in three cases boiled water, in two cases a weak solution of carbolic acid, and in one case a solution of boric acid. In six cases the character of the fluid is not given. Concerning this practice, a safe rule would seem to be not to irrigate if the amount of escaped fluid is small. Sponging with boiled water will then suffice. If, on the other hand, much fluid has escaped, and the peritoneum has been extensively involved, the best chance for the patient lies in using large quantities of hot fluid, so as to wash clean every part of the peritoneum. For this purpose, sterilized salt solution, 0.6 per cent., at 105° F., is advisable, and in these cases special drainage posteriorly on both sides, and in the pelvis, is to be resorted to. Five successful cases were drained; in ten no drainage was employed.

DUODENAL ULCERS.

What has been said of perforating ulcers of the stomach, as to diagnosis and treatment, applies equally to acute perforating ulcer of the duodenum. Before an exploratory laparotomy, the two are practically indistinguishable. Perforating ulcer of the duodenum is confined almost exclusively to men, but it occurs in them at the same age as does perforating gastric ulcer, *i.e.*, from the twenty-eighth to the forty-fifth year. The perforation occurs, as will be seen from Table II., most frequently (seven out of nine cases) in the anterior wall of the bowel, and in but one case was there an associated abscess. This fact is an important one. Out of the nine cases, one survived, to die two months later from an intestinal obstruction from adhesions which resulted from the operation; while, in another case, a second operation was performed on the twenty-fifth day after the first one, to evacuate pus between the liver and diaphragm. The patient ultimately recovered.

In concluding this brief of the operative procedures for the relief of perforating gastric ulcers, let us strongly emphasize the fact, which is here established, that the happy result of operation is dependent more upon its early performance than upon any other factor. And with this in mind, it should be wholly unnecessary to urge again every physician to acquaint himself very fully with the early symptoms of such a perforation.[1]

[1] In addition to the references already given, an article by Gilford in the *Lancet*, 1894, i., p. 1369, and one by Kriege in the *Berl. klin. Wochenschr.*, 1892, p. 1280, give a good idea of the subject.

SUBPHRENIC ABSCESS.

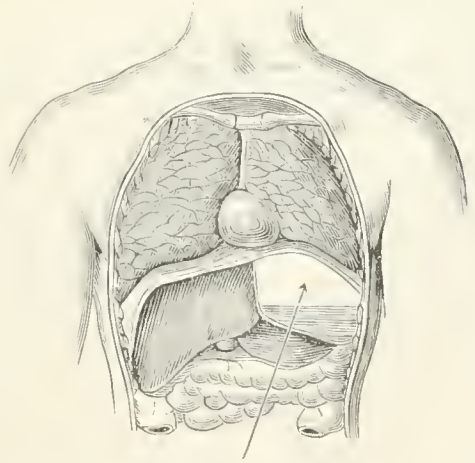
In quite another way, a gastric ulcer may perforate and cost the life of a patient, viz., by the formation of an abscess to the right or left of, or behind the stomach. To this condition several names have been applied, of which *subphrenic abscess* seems most likely to survive.

Etiology.—Subphrenic abscess may also arise from other than gastric lesions, and numerous cases have been reported as coming from diseases of the gall-bladder, liver, spleen, kidney, duodenum, and appendix. The etiology in some of these cases is questionable. Certainly, the stomach and appendix are responsible for the large majority of the abscesses that form under the diaphragm.

Penrose and Dickinson[1] state that of ulcers of the stomach only those cause abscess which are situated in the posterior wall; but others admit that an ulcer in the anterior wall, if near the cardiac orifice, may also give rise to an abscess. Weir has observed two cases in which an abscess formed between the stomach and spleen. In one of them the source of infection was a gangrenous appendix; in the other, an anterior perforation of the stomach.

Pathology.—The pus may be situated extraperitoneally,—which is rare, and is commonly then of renal origin,—or it may occupy some portion of the lesser peritoneal cavity, or be limited to the space between the cardiac end of the stomach, diaphragm, and spleen (or liver, if on the right side). It rarely breaks into the general peritoneal

FIG. 1.



Left-sided Subphrenic Abscess (containing gas). From Beck.

cavity, but progresses slowly, pushing up the diaphragm on the affected side, and frequently bursts into the pleural cavity or lung.

[1] Penrose and Dickinson, *Br. Med. Jour.*, 1893, i., p. 118.

Through the courtesy of Dr. A. J. McCosh, the following unpublished case of an anterior abscess from a gastric perforation is here inserted. The patient was operated upon by him in November, 1895, at the Presbyterian Hospital, and the perforation in the stomach successfully sutured.

A female, aged thirty, had obscure gastric symptoms for years, with occasional vomiting. The onset of perforation was not sudden, but there was slowly increasing epigastric pain and tenderness, lasting for five or six weeks, with constipation, moderate tympanites, and fever. Laparotomy disclosed an abscess between the left lobe of the liver and the lesser curvature of the stomach, holding about three ounces of pus. The perforation in the lesser curvature was still patent, and admitted the index finger. It was sutured, and the patient made a good recovery. Five months later, she was reported in fairly good condition.

In a similar case, also unpublished, Dr. Abbe reached and drained the abscess and sutured the perforation after excising the ulcer. The result, as far as the stomach was concerned, was perfect; but the inflammatory process had already invaded the diaphragm, and the patient died, at the end of eighteen days, of purulent pleurisy.

Melzer[1] has collected 110 cases of subphrenic abscess, in which only 5 of them were bilateral. Of the 48 unilateral cases occurring in women, 34 were on the left side, while of 57 unilateral cases in men, only 13 were on the left side. These figures are explained by the causes of the abscesses, which were: Gastric ulcer, twenty-eight times in women, four in men; duodenal ulcer, seven times in men, two in women; appendicitis, eleven cases in men, two in women.

Four cases are on record[2] in which a gastric ulcer has ended by perforation into the left ventricle of the heart, with immediate fatal hemorrhage.

Diagnosis.—At all stages in the development of a subphrenic abscess the physical signs are complex, and the diagnosis is one to tax the powers of the best observer. From one-third to one-half of the abscesses contain gas[3] (see Fig. 1), in which case the expected dulness will give place to a tympanitic resonance. Inasmuch as the diaphragm is involved in the inflammation, a serous pleuritic effusion may also result to add to the confusion. Pus and gas may likewise be found in the pleural cavity, if the diaphragm is perforated.

Before a perforation of the diaphragm has occurred the absence of Litten's "diaphragm phenomenon" associated with dulness over the lower thorax, not due to liver or spleen, may be suggestive of subphrenic abscess.[1] This "diaphragm phenomenon," which is not as well known as it should be, is the visible sucking-in of the lower intercostal spaces, one after the other, corresponding to the descent of the diaphragm. If the phenomenon is present on one side and absent on the other, there exists on the side on which it is absent either fluid or gas in the pleural cavity, pneumonia of the lower lobe, or a subphrenic abscess; for it is in these conditions that one is most likely to have a one-sided arrest of the muscular action of the diaphragm from inflammatory paralysis. The impairment of diaphragmatic motion is stated to be present in seventy per cent. of the cases of subphrenic abscess. The clinical value this test, however, remains *sub judice.*

The aspirating needle is another valuable aid in diagnosis, although owing to the cheesy character of the pus, several punctures and a large-sized needle may be necessary to obtain a positive result. If pus is found it will sometimes flow *out* in *inspiration* and not in expiration, thus indicating that the pus is below the diaphragm and not above it. If the needle enters a gaseous cavity a similar motion is communicated to the current of air, as shown by a monometer,[2] or by the effect on the flame of a match held close to the opening of the cannula, a test which Weir[3] found of value in one case. Further, the butt of the needle may be seen to rise on inspiration, since the descending diaphragm carries the point with it, and the chest wall forms the fulcrum; but, here too, paralysis of the diaphragm may interfere seriously with this as in nearly all of the tests. Indeed, in a recent case, Maydl,[4] with all his experience, was only able to establish a diagnosis after opening the abscess and cutting out a piece of its superior wall, and submitting the same to a microscopical examination, which revealed its muscular structure.

Prognosis.—Spontaneous recovery is very rare, but it has been reported, even when complicated by purulent pleuritis.[5] Barton[6] mentions the case of a woman, aged thirty-seven, who had been treated for years for gastric ulcer, with hematemesis, etc. One day she had severe pain, and vomited a quantity of dark material. The pain and vomiting continued for four weeks with subnormal temperature, as low as 95° F., and never

[1] Melzer, *N. Y. Med. Rec.*, February 15, 1896.
[2] Finny, *Br. Med. Jour.*, 1886, i, p. 1102.
[3] Debove, *Gaz. d. Hôpitaux*, 1890, p. 1159.

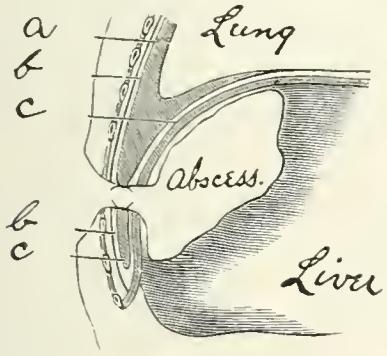
[1] Litten, *N. Y. Med. Rec.*, 1895, ii, p. 901.
[2] Pfuhl, *Berl. klin. Wochenschr.*, 1877, p. 57.
[3] Weir, *Internat. Med. Magazine*, February, 1892.
[4] Maydl, *Wiener klin. Rundschau*, January 19, 1896.
[5] Fenwick, "Clinical Lectures on Some Obscure Diseases of the Abdomen," 1890, p. 121.
[6] Barton, *Brit. Med. Jour.*, 1890, i, p. 1013.

above 99° F. She was given nutrient enemata and large doses of opium. At the end of the fourth week she passed a quantity of offensive pus per anum. From that time, there was a daily evacuation of pus, diminishing from about six ounces until it ceased, three weeks later. She was fed for six weeks almost entirely by the rectum. Recovery was perfect.

Such cases as these are to be looked on as happy accidents, and have no effect on a rational treatment. Left to itself, the abscess usually perforates the diaphragm,—on the left side, if of gastric origin,—and the patient succumbs to the septic products in from one to three months.

The treatment consists in the location and evacuation of the pus. If aspiration through the seventh, eighth, or ninth intercostal space procures pus, it is a very simple procedure to let it out thoroughly and drain the cavity, either by a thoracic incision, or by resection of a portion of the rib. If aseptic precautions are observed in the aspiration, and in the subsequent operation, and, what is the most important, if the diaphragm and pleura are stitched together, before the former is

Fig. 2.



Thoracic Opening in Subphrenic Abscess. From Beck.
a, pleural cavity; *b b*, costal pleura; *c c*, diaphragmatic pleura. At the opening the two layers of pleura (costal and diaphragmatic) are represented as sewed together, above and below.

incised, as suggested by Volkmann and Thornton, it is entirely possible to protect the pleural cavity from infection. Sometimes the prominence of the abscess in the epigastrium leads to an incision in that region; and several cases have been reported when the abdomen was opened in the left hypochondrium. In other cases, especially of the rarer extra-peritoneal variety, the lumbar incision proves most satisfactory.

Maydl,[1] whose exhaustive consideration of the subject of subphrenic abscess has justly received wide notice, was able to collect only ten cases of operation with three recoveries. Comte[2] found thirteen others with eight recoveries. Beck[1] has recently contributed three successful cases. Abbe has had two fatal cases, and Weir, five, with a similar result, making with McCosh's case, a total of thirty-four operations with fifteen recoveries. Several of these operations were performed at too late a period, when abscesses in thoracic or abdominal organs made death inevitable.

Eight times the incision was made in the epigastrium with five recoveries, in only one of which was suture of the associated gastric perforation attempted. Such a procedure is often very difficult on account of the adhesions, and, moreover, in several autopsies it appeared that the ulcer had entirely closed by cicatrization.

Of the two cases where the incision was made in the left hypochondrium, in one, the stomach was sutured with great difficulty, and death followed leakage in the suture line; in the other, no suture was attempted, and the patient recovered. Hence, one may safely leave the gastric opening to close by cicatrization, or by a secondary operation, if necessary. In eight cases the abscess was relieved by thoracotomy; of these, five recovered; three, complicated respectively by gangrene of the spleen, abscess of the spleen, and extensive suppuration, succumbed.

Cramer[2] has recently reported two successful cases operated upon by Bardenheuer. The pus in these cases was from an unusual source. In one case, situated on the left side, it originated from a splenic abscess, while in the other it started from an inflamed Fallopian tube, and developed between the liver and diaphragm on the right side.

One is justified, then, in concluding that if an abscess can be located with an exploring needle before serious organic lesion has occurred, that surgery offers a good chance of recovery, while therapeutic measures have little power to avert a fatal issue. Comte says "the prognosis of infra-diaphragmatic abscess of gastric origin is fully as grave as that of diffuse peritonitis." Attempts at evacuation of the contents of such abscesses, through a large needle, are universally condemned, and the incisions made for their relief should be free, and often associated with posterior drainage.

Operations for Non-perforating Gastric Ulcer.

The surgical treatment thus far discussed considers only perforated ulcers and their sequelæ; but without perforation a gastric ulcer may give rise to symptoms for the relief of which an oper-

[1] Maydl, "Ueber Subphrenische Abscesse," 1894, p. 330.
[2] Comte, *The Medical Week*, September 27, 1895, p. 466.

[1] Beck, *Medical Record*, 1896, i, p. 217.
[2] Cramer, *Deut. Zeit. f. Chir.*, 1896, Vol. xlii,. p. 597.

ation is indicated. Of these conditions may be mentioned

ADHESIONS RESULTING FROM GASTRIC ULCER.

Thus, as the result of ulceration, adhesions may be formed between the wall of the stomach and the contiguous structures. If the ulcer is situated posteriorly, the cicatrix thus formed is usually the most favorable termination of the trouble. If a movable portion of the stomach is involved, symptoms may result, not only those produced by a perforation or by an abscess formation, which have been already spoken of, but such as result from traction on adhesions of lesser or greater extent. Hahn[1] found in one case five separate old adhesions between the stomach and transverse colon, which he divided, and thus cured the patient of pain which had existed for years. Similar cases in which there were adhesions between the stomach and the liver have been operated upon by Rosenheim, Robson,[2] Perrier,[3] and Lauenstein.[4] In four of these cases the operation was a complete success; in three others the relief obtained was only temporary. In all of these cases the adhesions were of slight extent.

Mikulicz[5] had a case in which the stomach was adherent to the abdominal wall. He was able to divide the adhesions and free the viscus, to the complete relief of the patient. In two similar cases—one in charge of Billroth[6] and one of Hofmeister,[7] the stomach was torn in the attempt to divide the extensive adhesions which bound it to the abdominal wall. The underlying adherent portion of the stomach was thereupon excised, and the opening so made was duly sutured. Both patients recovered. In Hofmeister's case the opening in the stomach was as "large as a saucer," and it was found necessary to suture it transversely, in order to avoid undue constriction of the organ.

These three cases gave essentially the same history of gastric trouble for years, marked by epigastric discomfort, which was aggravated by food to a colicky pain, with occasional vomiting and loss of flesh and strength. In each case there was a well-marked tumor in the epigastric region, adherent to the abdominal wall.

Occasionally the surgeon may find presented to him, in a rather acute case, after the ventral abdominal incision has been made, that he has happily interfered, when limiting adhesions have recently shut off either a completed or a progressing perforation. These cases are properly to be considered under the first division of our subject, but can be touched upon here. The case lately presented by Dr. Parker,[1] and included in Table I, was of this kind. On the anterior wall of the stomach was found a mass of adhesions, soft in character, on separating which an incomplete perforation was seen and felt. This was packed with iodoform gauze and the tract left to granulate. The patient made a satisfactory recovery.

PYLORIC STENOSIS.

Of this, which is somewhat beyond our theme, it may be said shortly, that it has long been recognized that the ulceration of the pylorus and the contraction of the inflammatory tissue, which it occasions, are responsible in its acute condition for the pain, hemorrhage, and sundry disorders of digestion, and in its chronic form for the conjoined dilatation of the stomach. For its relief, the stretching of the contracted pylorus, suggested by Loreta, has so often been followed by recontraction, as now to have become an obsolete practice. The cure of such narrowings may be secured by the ingenious procedure for the enlargement of the contracted pylorus of Heineke-Mikulicz, which converts a horizontal incision into its lumen into a vertical one through transverse suturing.

Pylorectomy, a formidable operation, has several times been successfully performed for gastric ulcer at or near the pylorus. Comte[2] mentions five successful and three unsuccessful cases of pyloric resection. In three of these there was a dense tumor, which until operation was supposed to be carcinomatous, and in two of these instances its true nature was determined only after microscopical examination.

The chief objection to the pyloro-plastic operation is its high mortality. In the hands of one of its originators, Mikulicz,[3] it has a mortality of over fifty per cent. If it should be continued at this rate gastro-enterostomy should preferably be resorted to.

IRREGULAR GASTRIC CONTRACTIONS.

Allied to the foregoing complications of a gastric ulcer is the hour-glass stomach from a cicatrized ulcer. This rare condition has three times been operated upon in substantially the same manner; viz., by establishing an anastomosis be-

[1] Hahn, *Deut. Med. Wochenschr.*, 1895, No. 3.
[2] Robson, "Tr. Clin. Soc.," 1893; *Centralbl. f. Chir.*, 1895, p. 407.
[3] Perrier, *Centralbl. f. Chir.*, 1895, p. 676.
[4] Lauenstein, *Arch. f. klin. Chir.*, vol. xlv.
[5] Kænsche, *Deut. Med. Wochenschr.*, 1892, No. 49.
[6] *Arch. f. klin. Chir.*, vol. xxxix., p. 805.
[7] Hofmeister, *Beit. z. klin. Chir.*, 1896, vol. xv., p. 356.

[1] "Proceedings Surgical Society," March, 1896.
[2] Comte, *The Medical Week*, 1895, p. 466.
[3] Mikulicz, *Arch. f. klin. Chir.*, 1896, vol. li, p. 24.

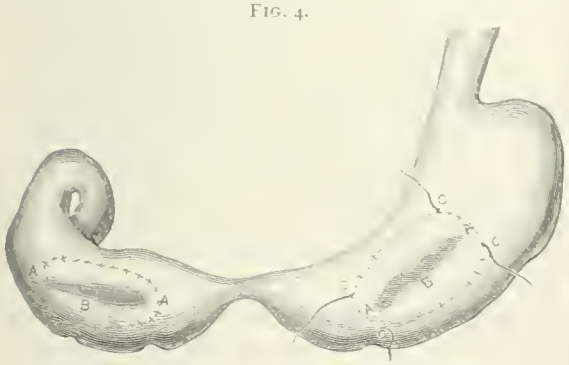
tween the two halves of the stomach. Wölfler[1] reported a successful case of this kind. In Eiselsberg's[2] case the suture leaked and the patient died of peritonitis. Watson[3] of Boston, has lately published a third case, in which the structure was so firm and small, as barely to admit the little finger introduced into it from without the stomach. The symptoms of pain, nausea, and vomiting, which had been growing more marked since their beginning, five years previous to operation, were entirely relieved by the anastomosis, and in five months she had regained twenty-two of the forty pounds in weight, lost in the year preceding operation.

Fig. 3.

Shows the position of the stricture.

The diagrams (Figs. 3 and 4), sufficiently illustrate the condition of the stomach and the operation done to relieve it. The suture was first completed, apposing the walls of the stomach, and then the anastomosis was established. It was accomplished, and this is Watson's modification of the operation, by an incision made in the

Fig. 4.



The stomach is here represented as being turned back to its original position in order to show the form (A A A A) of the sutured areas which united the two parts of the stomach. The communicating incisions (B B) and the position of the four long sutures (C C C C) which served as guides to indicate the limits of the sutured areas.

superimposed stomach. Through this opening, another cut, through the two already applied gastric walls, was carried with exactness into the subjacent or cardiac end of the stomach. After this was finished, the first incision, *i.e.*, that made in the pyloric end of the stomach, was closed as usual by sutures, as is shown in Fig. 4.

Gastro-enterostomy is a preferable operation. The anastomosis can either be a single one posteriorly at the stenosed part, conjoined with a Mikulicz-Heineke incision anteriorly at the same location, or a double gastro-enterostomy may be performed, tapping each sac of the stomach.[1]

RESECTION OF ULCERS NOT IN THE PYLORUS.

As long ago as 1882, Czerny[2] opened the stomach of a man aged forty-two, who had suffered for two years from incessant pain and vomiting. He found a large ulcer in the posterior wall and lesser curvature. A part of it was scraped out thoroughly, and a part was excised. The patient recovered, and in three months he had gained over forty pounds in weight.

In 1888, Cordua[3] reported the resection of an ulcer of the anterior wall of the stomach of a woman of forty-six years of age. The ulcer formed a movable tumor, easily palpable in the left hypochondrium. Its excision was attended by complete success, and the relief of a severe gastralgia of ten years' duration.

Two cases of successful resection of an ulcer adherent to the anterior abdominal wall have been referred to under adhesions. One of the most instructive of these cases is that of Schuchardt,[4] who excised an ulcer in the lesser curvature of the stomach. Two weeks later the patient died, and on autopsy, a second ulcer was discovered, larger than the first, and in a scarcely accessible situation, for a careful search with the hand (*sic*), introduced into the stomach at the operation, did not reveal it.

Keen[5] has also, with success, resected (in 1892) a gastric ulcer, supposed to have been a carcinoma from its symptoms, but which was probably a chronic simple ulcer, from the clinical aspects, the patient yet living, four years after the operation.

In the preceding cases the general sufferings of the patient determined the operation. But resection of a gastric ulcer has also been performed for hemorrhage. Roux[6] reported to the French Congress of Surgeons in 1893 that he had excised a small ulcer in the lesser curvature of the stomach of a man who was very anemic from two copious hemorrhages. The ulcer had eroded the coronary artery. This vessel was ligated and the opening

[1] Wölfler, *Beit. z. klin. Chir.*, 1894, vol. xiii, Part 1.
[2] Eiselsberg's, *Arch. f. klin. Chir.*, 1895, vol. l., p. 919.
[3] Watson, *Boston Med. and Surg. Jour.*, 1896, i, p. 338.

[1] Von Hacker, "Magenoperationen," 1895.
[2] Maurer, *Arch. f. klin. Chir.*, vol. xxx, p. 1.
[3] Cordua, *Rev. d. Sciences Med.*, vol. xxxiv, p. 259.
[4] Schuchardt, "Ger. Congress of Surg.," 1894.
[5] Written communication. Details to be published by him later.
[6] Roux, *Medical Week*, 1893, p. 63.

in the stomach sutured in three rows. The patient recovered.

Mikulicz[1] had a similar case, also involving the coronary artery, in which resection of the ulcer was likewise successful.

From this meagre number one can appreciate the sentiments of surgeons in connection with a condition that appeals strongly to their art for relief. In 1892 it was urged[2] that more boldness should be had in treating this symptom, which gave a higher mortality when treated expectantly than is generally believed; for Muller, in 127 cases of gastric ulcer, found hemorrhage to occur in 37 instances, and of these 14 were fatal, and that the treatment of this condition should not be postponed until the loss of blood had dangerously weakened the patient, and thereby lessened his chances of recovery.

But experience gathered since then has shown some unexpected difficulties which are likely to be encountered, one of which is illustrated by the case of Schuchardt just quoted, where great difficulty was experienced in finding the ulcer or all of the ulcers. There are ulcers where the thickening is so great as to form a tumor easily felt through the abdominal wall, or, as in our successful case, to be detected on palpating the exposed stomach; while in other cases it is difficult to recognize an ulcer by sight or touch, even after the stomach has been widely opened. In one of the cases already quoted, Abbe of this city, in his search for a gastric ulcer, made an incision in the anterior wall of the stomach 1½ in. long. Through this the stomach wall was everted, the opening being shifted in various directions for this purpose, but no ulcer was found; though at the autopsy later, several ulcers were seen to be present. And the writers of this article have recently seen at autopsy two cases in which an operation had been refused, and in which death followed repeated copious hemorrhage. In both cases the ulcer was so minute that it was difficult to find it when the whole stomach was spread out in a good light. In one of the cases its presence was positively shown only by transmitted light, which revealed a slight thrombus in the eroded vessel, situated in an otherwise bloodless stomach wall.

In cases like these the chance of finding the ulcer at the time of the operation, unless the vessel is bleeding, is practically *nil*. It is doubtful whether the illumination of the stomach, held up while an electric light is passed into it, or behind it into the lesser peritoneal cavity, would assist in the location of the ulcer; but this idea was suggested by the difficulties in Abbe's case. This case, as well as that of Schuchardt and others, presented the further difficulty of a multiplicity of ulcers. Even if found, they are not always in the same neighborhood; and a double or triple resection would add greatly to the severity of the operation.

In such a dilemma, the suggestion made by Doyen,[1] and practised by him in twenty-nine cases, seems worthy of consideration. It is the systematic application of rest to the ulcerated stomach, by means of a gastro-enterostomy, just as an ulceration of the rectum is often well-treated by a colostomy, or as a painful bladder is relieved by a suprapubic opening. The results in his own gastro-enterostomies, as well as those of other surgeons, prove that when this artificial pylorus is well-established that ulcers quickly heal and hemorrhage ceases.

But the question as to the risk of operation at once arises. What is the danger, on the one hand, from the operation *per se*? And, on the other hand, what is the danger to the patient from the ulcer if let alone? It is not easy to obtain the mortality from gastro-enterostomy in benign cases, and our information is therefore scanty. We present, however, for purposes of comparison, the following figures: Mikulicz[2] operated twenty-eight times, with nine deaths (thirty-two per cent.). Most of his cases were carcinomatous. Also that Murphy[3] has collected reports of cases, nearly all carcinomatous, in which his button was used to perform gastro-enterostomy. Of these sixty-one cases, twenty-eight (or forty-six per cent.) died from the operation. More to the point is the testimony of Haberkant[4] who states that the mortality following forty-seven gastro-enterostomies for benign causes, which he had collated, was twenty-five per cent. In contrast to these figures are the results of Doyen,[5] who reported to the last French congress of surgery that he had performed gastro-enterostomy twenty-nine times, with three deaths. The operations were nearly all performed for ulcer, pyloric spasm, or gastric dilatation due ulcer or pyloric fissure(?), only a few cases being cancerous. As two of the fatalities occurred in the cases of cancer, his record in benign cases is nearly perfect. Unfortunately, details of the cases operated upon are not given.

[1] Mikulicz, *Arch. f. klin. Chir.*, 1895, vol. li, p. 24.
[2] Weir, *loc. cit.*

[1] Doyen, *Rev. d. Chir.*, 1895, p. 911; *Cent. f. Chir.*, July 6, 1895.
[2] Mikulicz, *Zeit. f. Chir.*, 1895, vol. xxxvi.
[3] Murphy, Medical News, Philadelphia, November 16 and 23, 1895.
[4] Haberkant, *Arch. f. klin. Chir.*, 1896, vol. li., p. 861.
[5] Doyen, *Rev. d. Chir.*, 1895, p. 911.

When we try to estimate the risk to the patient from a gastric ulcer not surgically treated, we find that, according to the best authorities, from ten per cent. to fifteen per cent. of all cases die from perforation, and an additional three per cent. from hemorrhage. To this must be added a further small percentage in which ulceration ends in carcinoma (Comte says that from four to nine per cent. of the cases of malignant disease of the stomach develop in the base of a simple ulcer), and another percentage of patients who die slowly from pyloric stricture, adhesions, etc.

From all these data, it is safe for comparison to infer that about one-fifth of all the cases of gastric ulcer which are treated medically, die. This is properly to be contrasted with the reliable figures of Haberkant, who has shown, as just stated, that, by gastro-enterostomy, the least dangerous of surgical operations proposed to cure a gastric ulcer of severity, a mortality of twenty-five per cent. is to be expected.

The difference in the mortality given by Doyen, and that by other surgeons, is hardly to be accounted for by the slight improvement suggested in the former surgeon's technic. This consists[1] mainly in first tucking the greater omentum backward into the lesser peritoneum through a hole made in the gastro-colic omentum, and then stitching the colon to the stomach in order to save the dragging of the parts on the jejunum when the latter is attached by the gastro-enterostomy, which is now finally completed.

The application, therefore, of the operation of gastro-enterostomy for the relief of gastric ulcer, producing repeated hemorrhages, severe and prolonged pain, or obstinate vomiting (Doyen's formal indications for operation), while it is attractive in principle and meets well the difficulties of the other operations that have been practised, must be considered to be temporarily in abeyance.

The operation of gastro-enterostomy is yet unsatisfactory in its details. This is acknowledged by surgeons of experience, and is further proven by novel methods for its performance that are evolved at short intervals. The gastro-enteric opening can be readily effected, but the free current of the food, and particularly the bile, to the intestines below is not always safely accomplished, and in this respect the operation is individually felt to be a yet unsolved problem. Should, however, the improvement, suggested by Doyen, be corroborated at the hands of other surgeons, or perhaps even be bettered by them, the employment of the operation of gastro-enterostomy for the relief of the painful and less urgent forms of gastric ulcer would at once enable relief to be given to many, and our art to be notably amplified.

[1] *Arch. Provinciales de Chirurg.*, November, 1894: Congress for the transactions of the Chirurg., Française, 1895, p. 249.

CLINICAL LECTURE.

INFECTED ATMOSPHERE.[1]

By GUY HINSDALE, M.D.,
OF PHILADELPHIA.

THE air we breathe is a fertile subject for scientific investigation. Twenty years ago we knew comparatively little about the organic constituents of the atmosphere. Beyond the evidence of our senses in detecting bad air, prompting us to apply the general principles of ventilation, and beyond the well-grounded belief and knowledge that change of air to the mountain or the sea would favor the recovery of cases that resisted other measures, little was known.

Three names stand out prominently in the work which marks the beginning of a new epoch in this field—Pasteur, Tyndall, and John Bastian. Although the labors of the last-named investigator were extensive, and his conclusions produced an immense impression at the time they were published, they were entirely overthrown by Tyndall and Pasteur, and have now nearly passed into oblivion.

Bastian, twenty years ago, championed the doctrine of spontaneous generation. But the best minds of England and France not only proved him incorrect, but rapidly established the fact that all germs come from pre-existing germs, and that germ-life cannot arise *de novo*. Every one among us knows to-day that every aseptic dressing, every aseptic solution, so remains, provided it be not contaminated from without. The purest air we ever breathe contains some particles in suspension. This floating matter may be entirely innocuous, or it may consist of dangerous germs that seek lodgment in our throats, our lungs, our intestines, a crevice in the skin, or some other vulnerable point. Besides the floating matter in the atmosphere, embracing many germs that are well-known to be virulent, it has been commonly believed by physicians and sanitarians "that the discomfort and dangers to health and life which had been known to exist, sometimes at least, in unventilated rooms occupied by a number of human beings, were largely or entirely due to peculiar organic matters contained in the air expired by these persons, and that the increase in carbonic acid due to respiration had but little effect in producing these results, its chief importance being that it furnished a convenient means of determining the amount of vitiation of the air." In this connection I take the opportunity of calling attention to the latest researches on this subject, just published as one of the "Smithsonian Contributions to Knowledge," by Drs. John S. Billings, S. Weir Mitchell, of our own staff, and Dr. D. H. Bergey of the Laboratory of Hygiene of the University of Pennsylvania.

Experimenters hitherto have reported various results,

[1] Delivered before the Class of Nurses in Training at the Orthopedic Hospital and Infirmary for Nervous Diseases, Philadelphia.

but the majority have, of late, denied that the exhaled breath of healthy human beings, or of animals, contains a poisonous or organic alkaloid, or any poisonous product other than carbonic acid.

Dr. Bergey began by causing a man to breathe for from twenty to thirty minutes so that the expired air should pass through sterilized melted gelatin, which was then preserved as a culture for from twenty to thirty days. In the first trial six, and in the second two colonies of common air organisms developed; but when special care was taken to thoroughly sterilize the vessels used, the result was that in two consecutive trials the gelatin remained sterile. Epithelial scales and other matters were sought for by condensing the vapor of the exhaled breath and examining the product with the microscope. In six preparations thus made no bacteria or epithelial cells were found.

Experimenters in this field find that in one day a healthy man will exhale over a thousand gallons of air, and from six to twelve ounces of moisture. There is more or less ammonia in the product exhaled, the more where the teeth are allowed to decay and proper cleanliness is not observed. In examining the breath from a consumptive Dr. Bergey found that the fluid contained a smaller proportion of ammonia, and a larger amount of oxidizable matter than did fluid similarly collected from a healthy man. No organic alkaloids were found.

It was found in attempting to condense the moisture of the air of hospital wards that the placing of a dust filter in front of the condensing apparatus causes a marked reduction in the proportion of ammonia in the condensed fluid.

Drs. Billings, Mitchell, and Bergey, made a series of experiments by injecting into animals the fluid condensed from the air expired by healthy persons, and also by a man, whom you may remember to have seen in our clinic, whose larynx has been removed and who breathes through a tracheal fistula. In the last case the possibility of contamination of air in the mouth was of course excluded. The injections were made into the general circulation in rabbits, guinea-pigs, and white rats. The results of the subsequent examination showed that there was no special disease or degeneration in the organs of these animals; in other words, there was no organic poison.

The conclusion from this experimental work is that the injurious effects of air expired by healthy animals and men are due entirely to the diminution of oxygen, or the increase of carbonic acid, or to a combination of these two factors. It would appear also quite improbable that the minute quantity of organic matter contained in the air expired from human lungs has any deleterious influence upon men who inhale it in ordinary rooms, and hence it is probably unnecessary to take this factor into account in providing for the ventilation of such rooms.

The experiments showed, secondly, that in ordinary quiet respiration no bacteria, epithelial scales, or particles of dead tissue, are contained in the expired air. But in the act of coughing, or sneezing, such organisms or particles may probably be thrown out.

Thirdly, the ammonia exhaled is chiefly due to the products of decomposition of organic matter, which is constantly going on in the mouth and pharynx.

Fourthly, the air of hospital wards was found to be contaminated chiefly by minute particles—dust. This contained micro-organisms capable of producing inflammation and suppuration.

Fifthly. No peculiar volatile poisonous matter in the air expired by healthy men and animals was found, save carbonic acid.

It was also found in these investigations, as in others preceding them, that animals may be habituated to an atmosphere so vitiated by a loss of oxygen and an increase of carbonic acid, that a similar animal brought into it from fresh air dies almost immediately. It would appear that immunity to vitiated air may exist normally in certain mice, or be produced in them. It would be an interesting research to determine what races of men can endure the greatest foulness of atmosphere. One who reads the testimony of Arctic explorers, from Dr. Kane to Caspar Whitney, cannot fail to be impressed by the tolerance which the Esquimaux Indians show in this regard.

In the excessive cold of the Arctic regions the consumption of oxygen increases as the temperature diminishes, and the demand for oxygen is more urgent than in temperate climates. Drs. Billings, Mitchell, and Bergey, say that the proportion of increase of carbonic acid and of diminution of oxygen, which has been found to exist in badly ventilated schools, theaters, or barracks, is not sufficiently great to satisfactorily account for the great discomfort which such conditions produce in many persons, and there is no evidence to show that such an amount of change in the normal proportion of these gases has any influence upon the increase of disease and death-rates, which statistical evidence has shown to exist among persons living in crowded and unventilated rooms. The causes of the increased death-rate under these circumstances are chiefly pulmonary tuberculosis and pneumonia arising from the access of infected dust to the air passages. It is also pointed out that impure atmospheres may affect the vitality and bactericidal powers of the cells and fluids of the upper air passages with which they come in contact, and may thus predispose us to infections, the potential causes of which are almost everywhere present, and especially in the upper air passages and in the alimentary canal of even the healthiest persons. Whether such be the cause or not we do not know; future studies may enlighten us.

The recent observations[1] of Dr. Irwin H. Hance at the Adirondack Cottage Sanitarium ought to dispel some of the ill-grounded fears of the danger of contracting tuberculosis by mere contact with patients suffering from this disease. Needless prejudice has no doubt been aroused by ignorance of the precise manner in which tuberculosis may be communicated and hardship entailed on the unfortunate subjects. We know that hospitals, private dwellings, and conveyances do become infected, but we doubt if the patient infects by mere contact, much less by his breath. It is through the sputum, when dried and distributed through the atmosphere, that the chief mode of infection operates. Dr. Hance quotes the investigations of Celli and Guarnieri, who found the expired air of tubercu-

[1] *Medical Record*, New York, December 28, 1895.

lar patients free from tubercle bacilli, and also that air blown by a bellows over and through sputum very rich in bacilli remained free from these germs. Seven other experimentors made similar observations. For two months Tappeiner[1] caused a woman with advanced phthisis to cough through an opening into a wooden box in which were two guinea-pigs; at the end of that time they were killed and found to be sound.

I report Dr. Hance's observations as they are of great practical value to a proper understanding of this subject. Dr. Hance examined the dust taken from eighteen buildings belonging to the sanitarium, some of these having been occupied for eleven years by consumptives. The dust was taken from the darkest and most likely to be infected spots. The first group of four buildings consisted of the main building (parlor, sitting-room, and public library); the infirmary where all the acutely sick are sent; the oldest cottage and the most recently built cottage. One square yard of dust from each of these buildings was collected and ten guinea-pigs inoculated with it. From each of the remaining thirteen cottages a half a square yard of dust was taken and three guinea-pigs inoculated. These inoculated animals were kept from one to three months and then killed and microscopically examined. Five were found to have had tuberculosis, four others having died on the third to sixth day of other infectious diseases. The five that had tuberculosis constituted just one-half of the number of pigs inoculated with dust from the oldest cottage on the grounds, accommodating two patients, always advanced cases, one of them having been complained of by his roommate for spitting around the cottage.

It was thus scientifically proven that in this case carelessness and disobedience of rules, which a weak and sickly man is prone to break, were responsible for the infection of a cottage, thereby rendering it dangerous to himself and others.

On the other hand, the remaining sixteen buildings, some of which had been occupied for ten years by consumptives, were absolutely free from infectious material.

Such, then, are the results in a sanitarium favorably located in the Adirondack Mountains, presided over by one who is giving the best years of his life to the scientific treatment of tuberculosis, at the bedside and in the laboratory.

But what may we expect to find in the city hospital, where clouds of dust sweep over us from we know not where, and smoke from factories and locomotives poison the atmosphere?

Cornet collected dust from the walls and headboards of beds in seven of the hospitals of Berlin where phthisical patients were treated, and inoculated ninety-four animals. Fifteen out of twenty-one rooms furnished tuberculous matter. Of the ninety-four animals fifty-two died of other diseases; of the remaining animals, killed after forty days, twenty were tuberculous and twenty-two were sound. Tests of dust from the walls of houses of fifty-three private patients affected with tuberculosis were introduced into 168 animals, of which ninety died soon after the injection, thirty-four were found tuberculous, and the remainder sound. In the aggregate about one-fifth of the animals submitted to these tests were found to have become tuberculous. If acute intercurrent disease could have been avoided the proportion no doubt would have been still greater, as many animals died of some acute infection within two or three days. Cornet found that in no case was the dust infectious when gathered from rooms where cups and cuspidors were used exclusively to receive the sputum. We have seen that here again Dr. Hance has corroborated Cornet's result.

Dr. Hance examined the dust from the wards of a large city hospital occupied by tuberculous patients of both sexes. Out of nine pigs inoculated, five died of acute infection within three days. The four living pigs were killed at the end of sixty days and one had well-advanced tuberculosis.

Nurses, as a class, are unquestionably very liable to contract phthisis, but I do not believe that in this country the liability is anything like what is said to exist in Europe. The religious orders throughout the continent supply nurses for most of the large hospitals, and it is no doubt true that close confinement in convents, and the subsequent hard work and exposure to disease, renders them an easy prey to tuberculosis. It has been said that an examination of the records for twenty-five of thirty-eight European nursing societies, sixty-two per cent. died of tuberculosis. These records gave the cause of death in four thousand of the members.

I do not know that anyone has made investigation of the causes of death among American nurses in general; it is an important subject for study. We have it, however, on the authority of Dr. Herman M. Biggs, that in one of the New York hospitals as many as eleven nurses and orderlies, previously healthy, had been dismissed within a little more than two years because suffering from tuberculosis. It was an overcrowded and poorly ventilated institution.

I think I have thus made plain that dust is the abomination to be shunned. We shall probably never live where we can absolutely avoid it, but we can do a great deal toward preventing its virulent character. If the doctrine of spontaneous generation had been established, little encouragement might be expected in a fight against infectious diseases, but, as Pasteur said, thirty years ago: "Man has it in his power to cause parasitic diseases to disappear off the surface of the globe." Prevention, like charity, properly begins at home; and eternal vigilance is the price of safety. We can point with pride to the perfection of neatness seen in this hospital. In the first place its situation is not so exposed as in the case of some institutions. Its construction with marble and hardwood floors, its staircases of marble and iron; its painted walls and ceilings; the use of steam radiators, and the best appliances which a liberal management can furnish, go far to insure a good return for the efforts made to preserve cleanliness and good order.

In our own homes few have marble floors and steam heat, and painted walls are not looked upon with favor. We can, however, make a warfare against dust. A hardwood floor is conducive to health, because it quickly shows

[1] *Archiv f. Med.*, Bd. xxix, S. 59.

the presence of dust or dirt, and can easily be kept clean. But, best of all, we have sunlight. The tubercle bacillus is one of those imps that loves darkness rather than light, because his deeds are evil. There is no disinfectant so potent against tubercle bacilli as bright sunlight. The sunniest spots are the safest. In choosing a home avoid shadows from trees or high buildings; avoid dampness, especially dampness of the soil, and above all make inquiry as to previous occupants, whether in your home or your hotel, and if tubercular disease has been present, and no proper disinfection or supervision of the patient has been practised, see to it that the quarters are put in proper order or secure others.

I commend to your perusal the three tracts issued by the Pennsylvania Society for the Prevention of Tuberculosis, entitled: "How to Avoid Contracting Tuberculosis," "How Persons Suffering with Tuberculosis can Avoid Giving it to Others," and "How Hotel-keepers can assist in Preventing the Spread of Tuberculosis."

CLINICAL MEMORANDUM.

TWO CASES OF ACUTE MASTOIDITIS IN PERSONS SUFFERING FROM DIABETES MELLITUS.

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IN a recent issue of the MEDICAL NEWS (March 21, 1896), Dr. R. A. Urquhart, of Baltimore, reports "Two Cases of Abscess in the Mastoid Region, Associated with Diabetes Mellitus," and says, in the course of his remarks thereon, "that there does seem especial tendency to inflammatory changes in the mastoid region in the dyscrasia under discussion, there is unmistakable evidence, but as to the existing relationship, we are as much in the dark, as we are ignorant of the true nature of the diabetic diathesis." In reading over these remarks, the question arose in my mind as to whether or not my own experience was in accord therewith. Out of a considerable number of cases of mastoiditis, two of them have occurred in diabetics, whose histories I will relate, and from them try to answer the above question.

CASE I.—Mrs. C., aged fifty, was referred to me by Dr. F. W. Wunderlich, and was first seen at her home, March 7, 1893. She gave this history: Discharge from the left ear eleven days, preceded by ten days of severe pain, which pain has only gradually subsided since the commencement of discharge, until it has now ceased. At first had a loud pulsating tinnitus, which has stopped. Has severe pain in the right ear ever since two days after the pain began in the left ear, but as yet no discharge; the pain has been, throughout, accompanied in this ear by a pulsating tinnitus. The undoubted cause of her trouble was snuffing salt water up the nose, which she had done at the suggestion of a neighboring druggist. H. D. w. R. p '60, L. p/60; wh. R. 30", L. 20". Right canal partially filled with oil, etc., and, after clearing this out, the membrane was seen to be very red, with considerable bulging of the posterior half. Left canal full of sero-pus; left membrane has a small, nearly central, perforation, through which the sero-pus is constantly exuding. For treatment, punctured at once the right membrane, letting out a large quantity of sero-pus; inflated, and ordered the hot douche used every two hours. During the following ten days she was, the early part of the time, quite comfortable; the last few days, however, was suffering considerable pain in the right half of the head, with continued discharge, renewed pulsating tinnitus, and beginning mastoid tenderness until, on March 17th, it seemed to me unsafe to longer postpone opening the mastoid. This was accordingly done. The mastoid was found made up of small cells, in many of which were unhealthy granulations and a near approach to, but not absolutely, pus; cleansed and dressed in the ordinary way. March 20th, the old pain has been quite relieved. There is to-day some infiltration, hard and tender, along the anterior border of right sterno-mastoid muscle. Learned to-day, for the first, that patient is a diabetic. March 27th, the infiltration has, during the past week, in spite of every effort to stop it, increased, and pus has formed underneath the muscle, which can be pressed out through a sinus connecting with the mastoid wound. As this condition was extending, a counter-opening was made along the anterior margin of the sterno-mastoid, about three inches below the mastoid wound, and a drainage tube inserted. For the two days following this, there was quite extensive irregular infiltration extending around under the chin, down the sterno-mastoid muscle, and over part of the sternum. As I was without previous experience in diabetic mastoids, it may be imagined I was somewhat aghast at this extensive infiltration. I do not even yet understand the *rationale* of its occurrence, except that I believe it was due in some way to the sugar in the blood and other tissues. However, by April 3d the infiltration had largely disappeared, except immediately around the drainage tube, which was removed six days later. From this time on, the most noteworthy thing in the history of the case is the extreme slowness of healing, the patient not being in fit condition for final discharge until July 10th, the left ear having in the meantime quite recovered.

CASE II.—Mr. M., aged fifty-eight, seen by me in consultation with Dr. H. M. Sloat, May 1, 1893, who told me the patient has been a diabetic for probably a year; that when he took charge of him two or three weeks ago there was about ten per cent. of sugar in the urine, and that since that time he had been on diet, with marked decrease of the sugar. The attack with his ear dates back three weeks, at which time he was suffering from influenza. There has been discharge from the left ear three weeks, preceded for one day by pain, which was only partially relieved by the appearance of discharge, and soon returned to its former severity, being always worse at night. There has been, throughout, a loud pulsating tinnitus. Left auricle looks the least bit pushed out from the head; in left canal, pus, and along the posterior wall, very near the membrane, is a small, reddened, very sensitive, bulged portion. Left membrane has a posterior

superior, pouting, "teat-like" perforation, through which pus exudes freely. Prompt operation was recommended, and performed the next day, May 2d. Immediately after the first incision to the bone and loosening up of the periosteum, considerable pus escaped, apparently from a necrotic perforation of the cortex, just at the outer posterior border of the bony canal wall. The outer cortex was then chiseled away, with the escape of a large quantity of pus, the cell divisions being largely necrotic. The antrum was freely opened and scraped out, cleansed, and packed as usual. As a result of experience with the preceding case, I determined to dress this case daily, which was done.

The patient had not an untoward symptom until May 13th, the discharge from the tympanic cavity having ceased, the perforation in the membrane having healed, and the patient was about to leave the house. On this day he commenced to have symptoms which, while at first not very definite, ultimated in an attack of erysipelas, only clearly recognizable, however, by May 17th. May 24th, the attack of erysipelas has proven to be a severe one, affecting the whole right side of face and head, with considerable sloughing of upper eyelid; temperature repeatedly 104°; pulse 112–120; at times drowsy, at times restless, with some delirium the last day or two. The wound has not seemed seriously affected by the process, except that the granulations became rather flabby and pale, and the healing process stopped. The dressings have been continued with the utmost care twice daily since the 10th.

May 27th, consultation with Drs. Fowler and McCorkle, who, after going over the case together, expressed the conviction that the operation had been in every way a success, and that nothing different was to be advised, so far as the wound was concerned. Dr. McCorkle discovered a slight pneumonic process posteriorly over right upper lobe, whether septic, hypostatic, or diabetic, was not decided, although it was thought to be probably septic. As the patient was rather growing worse, a consultation was had, May 31st, with Drs. Delafield and Gray, of New York. In their opinion, patient is suffering with purulent meningitis, "probably originating from the ear trouble, rather than from the erysipelas." June 1st, the patient passed an enormous quantity of urine, loaded with sugar, after which grew worse, and died June 5th.

The etiology of these two cases is quite clear—one due to snuffing salt water up the nose, the other due to influenza. Both of these causes are, as is well known, perfectly competent to produce mastoiditis in any one, whether a diabetic or not. I find I have histories of one hundred and seventy-five cases of affections of the mastoid. Considering that out of that whole number only two have, to my knowledge, occurred in diabetics, I believe that I am safe in answering that my individual experience does not coincide with the view expressed by Dr. Urquhart.

Dr. Buck related some cases, and drew some inferences from them, before the American Otological Society, at its last summer's meeting,[1] in which he brought up the much more important questions, in this connection, of prognosis, the necessity for, and the success from, operation. He concluded very positively that such cases should be operated upon, and that the prospect of success was fairly good. My reason for taking up this point is to refer to an incident in the history of the first case. When I found the patient had diabetes, I wondered very much that Dr. Wunderlich had not told me of the fact, and asked him the reason of his silence. He said he feared I would not operate, his reason being that, two or three years before, he had a similar case, which he had sent to a prominent specialist, who positively refused to operate on account of the diabetic complication, and the case had died, as Dr. W. felt, without a fair chance. My own belief is very strong that such cases should be operated, and the earlier the better.

Considering the prognosis from the light thrown upon it by these two patients, it seems to me proper to consider that we had three inflamed mastoids of the kind we are considering, of which one recovered without operation, one recovered by means of operation, and one died. In this last case, I certainly think it is an open question whether the infection of the meninges arose from the ear trouble, or from the erysipelas. The patient progressed perfectly satisfactorily until the eleventh day after the operation, and was about to take up gradually his usual active life, when the early symptoms of erysipelas manifested themselves; and it is my own positive belief that he would have recovered but for this unfortunate complication.

[1] "Transactions Am. Otological Society for 1895."

MEDICAL PROGRESS.

Rupture of the Heart in the Course of Rheumatic Ulcerative Endocarditis.—SAMGUINE (*Presse Médicale*, 1896, No. 15, p. 91) has reported the case of a man, nineteen years old, who for twelve days presented pains in the joints, and on examination was found to be suffering with acute rheumatism, without evidence of a cardiac lesion. In the course of six days the patient was seized with intense precordial pain, and on auscultation pericardial friction-sounds were heard, most pronounced at the base. At the end of three days the friction-sounds had subsided sufficiently to permit the feeble sounds of the heart to be heard in their purity. The precordial pain had disappeared and the temperature was but slightly elevated. Some articular pain persisted. On the following day, after a good night, the patient, on attempting to rise, fell back, pale and dyspneic, and in a few minutes was dead. Upon *post-mortem* examination about a quart of blood was found in the pericardial sac, the inner surface of which was shaggy with lymph. The myocardium was flabby and dull. Upon the posterior aspect of the left ventricle was an area of ulceration about three-quarters of an inch in diameter, at the lower portion of which was a small opening traversing the thickness of the myocardium. The orifice permitted the introduction of a little finger, and its borders were soft and friable. The valves of the heart were normal and the coronary arteries presented no atheroma. The kidneys and the spleen contained embolic abscesses, and there was besides incipient cirrhosis of the liver and chronic gastritis. The joints were hyperemic and contained synovial fluid, but no pus. Microscopic examination showed that at the site of perforation the myocardium

presented a round-cell infiltration and numerous small hemorrhages. In places only detritus remained. The adjacent myocardium was involved in reactive inflammation. In and around the blood-vessels at the area of ulceration were granulo-fatty matters and micrococci. The micro-organisms were present especially near the endocardial surface, and proved to be staphylococci cerei albi. Lesions like the one reported may result, it has been thought, from either extension of the ulcerative process of myocardium through the muscular wall of the heart, or by occlusion of a coronary artery (either from atheroma or through detritus and micrococci), with breaking down of the part of heart deprived of its blood supply. The latter is the more likely mode of occurrence. The accident is a rare one, occurring, according to Osler, but fifteen times among 209 cases of ulcerative endocarditis.

The Weight-Relations of Normal Puerpera.—As the result of a series of observations made at the Obstetrical Clinic of the University of Heidelberg, HEIL (*Archiv für Gynækologie*, B. li, H. 1, p. 19) found that the average loss of weight of one hundred puerperal women was five pounds for an average bodily weight of 122 pounds, about one to twenty-four. The greatest loss took place on the first day, gradually sinking to the fourth day, to ascend again on fifth and sixth days; on the seventh it approached that of the second and third. From the eighth to the tenth day the weight increased, to decline again from the eleventh. In eighty-two per cent. of the cases the minimum weight had been reached by the ninth day. In addition to the primary loss of weight in the first days of the puerperium, a secondary loss was appreciable, in the majority of cases, toward the close of the second week. In the case of women who did not nurse their children the loss of weight was below the average; as it was also in the case of unipara, tertipara, quartipara, and quintipara. In the case of deutipara the loss was above the average. The loss of weight bore a direct relation to the bodily weight. In young puerpera the loss of weight was strikingly slight. The loss of weight of a woman who had borne twins was thrice as much as the average loss in single deliveries.

THERAPEUTIC NOTES.

The Treatment of Dysmenorrhea.—TOUVENAINT (*Revue Internat. de Médecine et de Chirurgie*, 1896, No. 2, p. 39) divides the treatment of dysmenorrhea into symptomatic and curative. In the former he recommends the administration, several days before the expected time of the period, of emmenagogues, such as apiol, salicylic acid, cerium oxalate, and especially potassium permanganate (in doses of from three to nine grains daily). When menstruation has set in, a cataplasm containing tincture of opium may be applied to the hypogastrium, or an enema consisting of a glass of milk and ten or fifteen drops of tincture of opium is thrown into the bowel; or an enema of chloral is administered; or a suppository of the following constitution is employed:

R	Extract of opium . . .	$\frac{1}{3}$ grain
	Extract of belladonna . .	$\frac{1}{9}$ grain
	Cocoa-butter	45 grains;

or a hypodermic injection of morphin may be given. Four times daily the patient will take ten drops each of tincture of viburnum prunifolium and tincture of piscidia erythrina. Exalgin also may be tried in doses of from three to five grains, thrice daily. Cannabis indica has also proved serviceable, and from three to five drops of the tincture may be given every hour. In nervous women the bromids will be required, and a tablespoonful of the following may be given twice daily:

R	Strontium bromid. Ammonium bromid. Potassium bromid.	aa .	1½ drams
	Syrup of orange-peel . .		10 fluid drams.

Locally, frictions with a calmative liniment may be practised. Thus, take of

Oil of hyoscyamus . .		6 fluid ounces
Tincture of opium . .		1 fluid ounce
Camphor Extract of belladonna Mix.	aa .	1 dram

In the intermenstrual period, local and general applications of electricity may be employed. The general treatment consists in the electric bath, the static spark being applied to the lumbar region for twenty or thirty minutes. Locally, for the week preceding menstruation, faradization of the uterus is practised, and during the remainder of the interval, except in virgins, caustic effects are induced by the intra-uterine application of the cathode.

The curative treatment is surgical, and depends upon the causative condition. It will therefore require, in different cases, progressive dilatation of the cervix, followed or not by curettage and the introduction of a metallic stem (which is permitted to remain for a variable length of time) stomatoplasty, bilateral incision of the cervix, the correction of displacements, the enucleation of fibromata, etc. If conservative measures fail, and if the nervous symptoms persist, it may be necessary to undertake a radical operation, such as removal of the ovaries or vaginal hysterectomy.

Gonorrhœa of the Rectum in Women.—From a study of the records of the City Hospital of Frankfort-on-the-Main, BAER (*Deutsche medicinische Wochenschrift*, 1896, No. 8, p. 116) found that from June 15, 1895, to January 1, 1896, there were admitted to the dermatological department 296 women suffering with venereal diseases. Of this number 105 were syphilitic only, the remaining 191 presenting gonorrhœa, either additionally or exclusively. On careful and systematic examination of these 191 by means of a speculum, whether symptoms existed or not, Gonorrhœa of the rectum was found to exist in 67. In many cases the involvement of the rectum was unattended with special symptoms and objective manifestations. In others there was pain, redness, swelling, sometimes erosion, and discharge. In two cases periproctitis was a complication. The treatment consisted in irrigation of the rectum, once or oftener daily, at first with a three per cent. solution of boric acid, and subsequently with a 1–3000 solution of argentamin. Erosions were touched with a two per cent. solution of argentamin. In some of the latter cases suppository of ichthyol with cocoa-butter were used with satisfaction.

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SATURDAY, MAY 2, 1896.

AMERICAN MEDICAL ASSOCIATION—THE MEETING IN ATLANTA.

The meeting next week seems to offer a veritable feast of good things. The scientific department is well arranged, and the various sections are in good hands. With such leaders of thought as the president, Dr. Beverly Cole; Senn, in surgery; Osler, in general medicine, and Rohé, in hygiene, not to mention the other distinguished names that appear at the head of the various sections, the meeting is destined to be a memorable one. The general outings, in the way of by-excursions, are also attractive, and it is evident that the committee in charge can be depended on to fill the function of social host in a manner gratifying to the most exacting.

The concurrent meetings of the American Academy of Medicine, the Association of Medical Colleges, the Association of Medical Editors, and the Conference of the State Examining and Licensing Boards, is an additional interest of no little importance. As the *Journal* remarks, the former meeting in Atlanta, fifteen years ago, was a "history maker." Unless all signs fail the coming meeting will mark an epoch in the annals of the Association.

PUERPERAL SELF-INFECTION.

Obstetricians have been occupied during the recently passing years with problems of moment that have brought a new interest to obstetric science and art. Cæsarean section, being made elective, has been put upon the same basis as any other capital operation, with saving advantage to both mother and child. Symphyseotomy has been perfected in its aseptic technic and has taken its place among the accepted operative procedures before which no competent obstetrician hesitates when the indications are present. But brilliant and attractive as these procedures are, they pale into insignificance in comparison with the importance of determining the proper application of asepsis to the parturient woman, in the routine practice of the general practitioner. Cæsarean section and symphyseotomy are the exceptions; normal labor, when not interrupted or hastened by meddlesome interference, is of daily occurrence. What, then, shall be the routine practice regarding asepsis? Before this can be answered satisfactorily, it becomes necessary to look into the underlying principles or processes of infection.

The history of the evolution from the mysticism that surrounded the etiology of puerperal fever into the modern conception of puerperal septicemia is an interesting one; and it is gratifying to recall the debt obstetric science owes to the magic insight of Oliver Wendell Holmes, who first discovered the true nature of puerperal fever.

But obstetrics, like all surgical procedures, must take its teaching from the great principles of sepsis and asepsis. And the cardinal principles that have application here are two: (1) That all inflammatory processes, as indicated by rise of temperature, are of septic origin, and (2) that septic infection is by direct contact, and not atmospheric.

In obstetrics, an effort has been made to establish the principle of auto-infection to account for certain cases of puerperal sepsis, seemingly unaccountable according to the principles above enunciated, and this proposition was based upon the accepted fact that the vagina is the habitat of numberless bacteria. There remained for determination, however, the delicate question as to the virulence or innocuousness of these micro-

organisms and the properties of the vaginal secretions as a culture-medium or a germicide. Upon these two points hinges the entire question of self-infection. And here the students of the subject have ranged themselves in diametrically opposite positions. Dr. Charles Jewett set forth the status of the subject very clearly in his paper, read before the New York State Medical Society and reported in the Medical News of February 1st, and now appearing in full in the *Am. Gynec. and Obstet. Journal* for April. The extreme auto-infectionists maintain that pathogenic micro-organisms are always present in the vagina, and in condition to take on virulence when a favorable soil is provided by the decomposing discharges following labor. Every obstetrical patient, therefore is liable to infect herself. The opposing school maintain that pathogenic bacteria do not live in healthy vaginal mucus—indeed, that the normal secretion is fatal to them. This immunity, according to Döderlin, is due to the acid condition of the normal secretions, which acidity he attributes to an acid-producing bacillus. Jewett concludes that the findings of the bacteriologists tend to establish the belief that the vaginal secretion is infectious when diseased, and possibly so in health. But it is well not to forget that the findings of the bacteriologists require confirmation by the clinician.

In the clinical experience of prominent obstetricians, we find the practice which is based upon these extreme views of the bacteriologists, correspondingly at variance; one faction insisting that preliminary and *post-partum* antiseptic douches are indispensable, and the other claiming that such douches are not only useless, but harmful. The middle ground is doubtless the safe one; namely, that the healthy parturient, in the absence of contact infection, is safe against septic disease, and the routine douche is a useless and possibly injurious practice. But when the secretions are pathological, as shown by their alkaline or neutral reaction to litmus-paper test, and in doubtful cases, confirmed by culture test, thorough antiseptic cleansing is indicated and imperative. All this discussion presupposes the acceptance of the most thorough external subjective and objective asepsis on the part of the accoucheur, the nurse and the patient.

BACTERIOLOGY.

THE DETECTION OF TYPHOID BACILLI IN WATER AND IN FECES; ELSNER'S METHOD.

The usual increase in the number of typhoid fever cases in summer, especially in those occurring at summer resorts, naturally makes a consideration of the means which we now possess, for the detection of the typhoid bacilli, a timely one.

The greatest difficulty in identifying the typhoid bacillus in water and feces arises from its marked resemblance to the common colon bacillus.

It is true that the characteristic typhoid and colon bacilli differ in many important respects from each other, but on the other hand, some typhoid bacilli present many of the characteristics of the colon bacilli, and some colon bacilli those of the typhoid group. This resemblance is so marked that many have been led to suggest that they both belong to the same species, and that one would, under favorable conditions, change into the other. This view is, however, losing ground. The usual differential tests, such as the degree of motility, the number of flagella possessed by the suspected bacilli, the growth in gelatin, in milk, on potato, in media containing sugars and albumins, and their pathogenic action have sufficed, as a rule, to at least strongly indicate that a certain bacillus was either a typhoid or colon bacillus. These tests have not been considered sufficient, however, to absolutely identify them. During the past year, two new additional means have been suggested, which give promise of aiding us in obtaining both bacilli from fluids containing other bacteria, and in surely separating them, one from the other. One of these means, the injection of the suspected typhoid bacilli or colon bacilli into the abdomen of guinea-pigs, along with minute quantities of the serum of animals immunized to typhoid or colon cultures, was treated of last month. If the bacilli, injected with the typhoid serum, were typhoid bacilli, they soon died, leaving the animal unharmed; if, however, they were the colon bacilli they increased rapidly in number, killing the animals.

The specific bactericidal substances developed in animals by repeated injections of the living cultures by Pfeiffer, have since been obtained in suffi-

cient strength to exert their specific power outside the body, and experiments are being carried on to prove the reliability of the results obtained, by noting the specific bactericidal effect upon the bacilli when injected in a quantity of either the typhoid or colon serum kept in the test tube.

The other addition to our means of obtaining the typhoid bacilli from feces or water, and identifying them when obtained, has been furnished by Elsner.[1]

Attempts having failed to obtain typhoid bacilli in pure cultures from mixtures by animal inoculation or to find media in which the growth of the typhoid bacilli would be so increased as to outstrip all other bacteria, Elsner tried to solve the problem by seeking media in which all other bacteria than the typhoid would be more inhibited in their growth than the latter. He tried various media by eliminating or adding different substances before he arrived at one which gave him at least a very marked degree of success.

He made his media as follows: To half a kilogram of chopped potatoes he added one liter of water, and boiled for 1½ hours. After straining through a cloth, ten per cent. gelatin was added. This potato gelatin should have a degree of acidity, such that each 10 c.c. would require 2½ c.c. of a decinormal soda solution to neutralize it. Finally one per cent. iodide of potassium is added and the media is completed. If a stock is to be kept for future use, the potassium iodide should be withheld until shortly before it is to be used.

On this culture medium, nearly all bacteria except the typhoid and colon bacilli, either do not grow at all or are greatly inhibited. The colon bacilli still grow more quickly than the typhoid bacilli, but so differently, that the colonies of the two bacilli can be, as a rule, easily separated. At the end of twenty-four hours, when the gelatin plates are studied with a lens of slight magnification, the colon bacilli are found well developed, while the typhoid are hardly visible at all. At the end of forty-eight hours, the typhoid bacilli appear as small, very finely granular colonies, those of the colon bacilli being much larger, coarser, and more highly colored. The difference in appearance is mainly due to the greater rapidity of growth of the colon bacilli. On plates containing very abundant colonies, those of the colon bacilli may look just like those of the typhoid.

Elsner tried his test practically in separating thirty cultures of typhoid and colon bacilli, and in every case the results agreed with a parallel series, tested by Pfeiffer's bactericidal serum. He found that in water, purposely contaminated with the typhoid bacilli, he could obtain the bacilli when they were present in very small numbers. Thus he put a loop of typhoid bacilli with twenty loops of colon bacilli into two liters of river water. From this, after thoroughly shaking, he took one loopful and again placed it in two liters of fresh water. After shaking, he once again took a loopful and put it into a third two liters of water. From this last water, which represented a dilution of the original culture of 1 to 8000 millions, he obtained the typhoid bacilli. He further examined the stools of seventeen cases of typhoid fever and found the bacilli readily in fifteen. The other two were convalescent cases, in which the bacilli may have disappeared.

From a rather limited experience, I should judge that Elsner has given us a method for the detection of the typhoid bacilli, in suspected feces or water, of great value. By limiting or preventing the growth of most other bacteria, especially those which liquefy gelatin, it allows us to more successfully study the plate cultures, and by causing the differences in appearance of the typhoid and colon bacilli to become more marked, it aids us in separating them. That this method will alone suffice to positively identify the typhoid bacilli, seems to me improbable. Pfeiffer's bactericidal serum test may prove sufficient for this whenever the bacilli are virulent.

WM. H. PARK, M.D.

[1] *Zeit. Hygien. u. Infectionskrank.*, B. 21, H. 1.

ECHOES AND NEWS.

A CERTAIN nervous condition, said to result from excessive use of the bicycle, has been termed the "vibratory habit." Sir Benjamin Ward Richardson has presented the subject before the Medical Society of London, and evidently considers it a disease.

THE Russian Committee of the International Medical Congress, which will be held in Moscow next year, has very courteously reconsidered its determination to exclude English from among the official languages of the meeting.

It is now decided that English will be placed upon the same footing as German and Russian in the reading and discussion of papers, but that French will be used in the transaction of all official business.

AT a meeting of the Philadelphia County Medical Society, held April 15th, a committee was appointed to urge the members of the American Medical Association to favor the holding of a semi-centennial celebration of its organization. The society also instructed its delegates to invite the association to hold the meeting of 1897, which will be the semi-centennial, in the City of Philadelphia.

DR. CHARLES W. STILES has recently received the high honor of being elected corresponding member on Medical Zoölogy of the French Academy of Medicine. Dr. Stiles, although only twenty-eight years of age, has been for the past five years zoölogist of the Bureau of Animal Industry in the U. S. Department of Agriculture, and is recognized as an authority in his particular branch of science.

A PHYSICIAN recently appeared at a medical society with a pocketful of spoons, which he had gathered during his professional rounds, with a view of measuring their capacity. He found them to vary from two-thirds to three times the standard capacity. One spoon held just five times as much as another of the collection. The practical application of these facts is obvious.

DR. SAMUEL HYDE of Buxton, England, writes to the *British Medical Journal* that he has had prepared an extract of fresh articular cartilages and synovial membranes from healthy animals, which he is trying as a therapeutic agent in cases of chronic joint diseases, including rheumatoid arthritis. The apparent analogy between the degenerative changes of the latter and those in other diseases in which animal extracts have proved beneficial, leads him to hope for favorable results in these obstinate affections.

THE RIVERSIDE ASSOCIATION in New York has established, under the direction of Dr. Simon Baruch, a system of baths for the purpose of enabling people in the most moderate circumstances to obtain the benefit of the water treatment. A dispensary practice is the severest test to which any therapeutic measure can be put, and it is proposed by this institution to apply the water treatment to chronic diseases which have resisted other methods. To this end the profession are invited to send any and all dispensary cases of intractable diseases to the Association House, No. 259 West Sixty-ninth street, daily between 2.30 and 4 P.M. The Riverside Association is a chartered body, organized according to the usual methods of dispensary associations, for the purpose of assisting the poor in many and varied directions.

TWO Parisian investigators have found the temperature of the normal human liver to be one degree centigrade higher than the intestines. The normal temperature of the other organs diminished in the following order: spleen, heart, kidneys, brain, muscles, and skin.

THE INSTITUTE PASTEUR, Paris, has just published its report for 1895. The salient feature of the statement appears to be that of 1523 persons treated only 5 succumbed to their injuries. In the fatal cases the symptoms of rabies manifested themselves within fifteen days after the first inoculation; one patient, however, was seized with rabies during the course of the treatment, and has not been included in the figures. A table of statistics contains the figures commencing from 1886, showing that of the 2671 persons treated in that year 25 died, or a mortality of .94 per cent., while in 1895, of the 1523 treated only 2 died, or a mortality of .13 per cent.

DR. ERNEST B. SANGREE of Philadelphia, has been elected professor of pathology and bacteriology in the Vanderbilt University, Nashville, Tenn. Dr. Sangree is at present pathologist to the Philadelphia Hospital, assistant professor of pathology in the Medico-Chirurgical College, adjunct professor of pathology in the Philadelphia Polyclinic, and member of the Academy of Natural Sciences.

THE announcement of the death of Count Mattei brings again to mind the investigation of the quackish methods of this eccentric impostor by a committee of English physicians. Unfortunately, this committee quarreled among themselves, and their report was incomplete. The late Count proposed to cure cancer with preparations of colored water, which he bottled and called electricities, and occasionally he resorted to inert powders for a like purpose.

A NOTABLE and most commendable interest in the study of the natural sciences by comparative methods has simultaneously developed in several American universities. A chair of comparative pathology has just been established in connection with the Medical Department of the University of Buffalo, which will be filled by Dr. Woods Hutchinson. This is the first of its kind in America, but is closely followed by a gift to Harvard of $100,000 from a wealthy merchant of Boston, to establish a similar chair in that institution. The holder of this professorship, who has not yet been selected, will be a member of the Medical School, and devote himself to the study of diseases of both men and animals, with reference to their relationship and cause, as well as to their cure and prevention. No more important indication of scientific progress has marked this last decade of the nineteenth century than this movement to encourage laboratory investigation.

MEDICAL women are now admitted to practise in Austria, under conditions requiring not only a high professional education, but also a blameless moral conduct. In certain provinces their services are in urgent demand for the care of many Mohammedan women, who have heretofore been without medical attention.

AFTER investigating the subject with the thoroughness characteristic of the continental scientists, Professor Wolffhügel of Göttingen, decides that burial in accordance with the general rules practised in America, is not unhygienic. However, the grave should not be opened for thirty years, although complete decomposition often occurs in six. Cremation cannot be considered as a *sine qua non* in ideal sanitation. While discussing this gruesome subject it may be well to mention that a French physician has recently written a book upon the bacteria of dead bodies,

showing that different varieties are present at the several stages of decomposition. In medico-legal practice, it may be of value to thus determine the time that has elapsed since death, which this author claims may be easily done by a study of the "fauna of the cadaver."

Microbes in milk was the subject of a paper recently presented before the Edinburgh Royal Society. It was found that in winter 24,000 bacteria were the average for each cubic centimeter, and 173,000 in late summer and autumn. Milk from country dairies was found to contain an average of 44,000, while that from cows confined in town averaged 352,000 per cubic centimeter. It was not urged that any or all of these were necessarily virulent. This field should receive thorough attention from our bacteriological laboratories, not only to determine when milk is unfit for food and methods for its sterilization, but also to acquaint the dairymen with the scientific methods of successful butter-making, which is more or less dependent upon the presence of micro-organisms. It is not impossible that discoveries more valuable than those of Pasteur in the process of brewing, may be made in this industry.

Under authority of the statutes relating to food and drug inspection, the State Board of Health has examined such samples of diphtheria antitoxin as are offered for sale in Massachusetts, with the following results:

Serum No. 2, Behring. Bottle containing ten cubic centimeters of serum of an advertised strength of 1000 units.

The test showed that the serum was up to the standard.

Serum of Parke, Davis & Co. Bottle guaranteed to contain ten cubic centimeters of a total strength of 1000 units.

The test showed that the serum was up to the standard.

Serum No. 2, of Mulford & Co. The label states that the bottle contains ten cubic centimeters of a total strength of 1000 units.

The test confirmed the statement, and showed the serum to be up to the guaranteed strength.

Serum of the Pasteur Institute of Paris, France (Roux). The circular states that the serum is at least 1–50,000 in strength. As this is considered equivalent to Behring's serum No. 1, the test was carried out with this strength in view. It was, however, found to be weaker than this. A second test showed that the ten cubic centimeters of serum contained a total of 500 antitoxic units, instead of 600 units.

Gibier's diphtheria antitoxin, New York. The label states that the bottle contains twenty-five cubic centimeters, of a total strength of 2500 units. The test showed that the serum was far below this in strength. In a second test, it was determined that the bottle contained from 625 to 750 units, instead of 2500, as advertised. The strength of this serum is thus a trifle below one-half of that of Behring's serum No. 1; ten cubic centimeters of Behring's serum No. 1 contain 600 units.

We understand that the samples were obtained directly from the producers or their agents.—*The Boston Medical and Surgical Journal.*

CORRESPONDENCE.

To the Editor of the Medical News:

Dear Sir: I have before me a reprint entitled "A New and Rapid Method of Dealing with Intra-ligamentary Fibromyomata," by Dr. W. R. Pryor of New York (Medical News, December 1, 1894), and in justice to Dr. Pryor's original and valuable work in this field, I desire to yield him the credit of using a plan of dealing with intra-ligamentary tumors, in all important particulars, similar to that which I have been using and demonstrating at my clinics at the Johns Hopkins Hospital for a year and a half past (*Johns Hopk. Hosp. Bull.*, February and March, 1896). Dr. Pryor's publication and use of the operation in this important part of the field, antedates my own, and would have received full credit if I had seen it.

He describes very graphically the removal of an intra-ligamentary tumor, and dwells fully upon the great advantage of this way of dealing with them.

He makes also a suggestion, I think, of considerable value, in tying the ovarian vessels on the side last enucleated before tying the uterine vessels.

In my own work, I have almost exclusively adopted a supra-vaginal amputation of the cervix, and I perform hysterectomy in this way for all sorts of myomata as well as for pelvic inflammatory diseases, where drainage cannot be used. If I recollect, the evolution of this operation in my clinic, the design was at first for the rapid enucleation of ordinary myomatous uteri, and the advantages now apparent in the intra-ligamentary forms, were not perceived until a number of other cases had been operated upon. Yours truly,

Howard A. Kelly.

Baltimore, Md., April 27, 1896.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, April 20, 1896.

The President, Joseph E. Janvrin, M.D., in the chair.

Dr. Louis Lichtschein read a paper on

HYPNOTISM AS A THERAPEUTIC AGENT; ILLUSTRATED.

He said that there was a diversity of opinion as to the correct theory of hypnotism, and that the estimates which different observers formed as to its therapeutic value were largely dependent on the theories which they accepted in regard to the subject. Charcot, to whom the profession was principally indebted for the modern interest in the study of hypnotism, contended that it is an artificial neurosis which can be produced in hysterical persons only. In his view, therefore, its domain was very narrow and the dangers attending it were very great on account of its liability to do serious injury to the nervous system. On the other hand, the Nancy school of hypnotists, headed by Liebault and Bernheim, advocated the theory of simple suggestion, and held that hypnotism was nothing else but persuasion.

Charcot professed to observe three stages: (1) catalepsy, (2) lethargy, and (3) somnambulism; but the truth is that no one outside of Salpétrière had been able to recognize these three stages. The question arose: Are hypnotism and hysteria always associated? which must be answered in the negative. On the contrary, the more sound a brain is, as Forel had shown, the more easily is it affected. The school of Nancy held that every person is more or less susceptible, and Bernheim discriminated no less than nine degrees of hypnotic influence, beginning with somnolence and ending with post-hypnotic, retro-active hallucination. The main point contended for is that there is no hypnotism that is not suggestion. Suggestion, as defined by Bernheim, is an idea which is introduced into the brain and is accepted by it.

After some explanations as to the probable *modus operandi*, in which hypnotism produced its effects, Dr. Lichtschein proceeded to speak of its practical value as a therapeutic agent. In diseases like cancer, tuberculosis, syphilis, etc., when there were serious structural changes, no benefit, he said, could be expected from it. Hynotism was by no means a panacea, but there were many acute and chronic diseases in which suggestion might act in a curative manner. A number of these he referred to. Functional nervous diseases of various kinds were among those most amenable to it. In neurasthenia, however, it was difficult to obtain good results; but with patience and perseverance these could usually be finally arrived at, though considerable time might elapse before a cure was effected. The same was true in regard to hysteria, and hystero-epilepsy. True epilepsy was not affected by it. In facial paralysis, associated with hemiplegia, he had some satisfactory results. Suggestion was a very valuable agent in the treatment of alcoholism, and whatever efficacy there might be in the so-called Keeley cure was no doubt due to this cause. In the morphia habit its application was more difficult, but much could be hoped from it with proper care. In three out of the four cases that he had personally cured he had found it necessary to induce uninterrupted sleep for from ten to twenty days. The chloral habit could also be overcome by it. Hypnotism was of special value in the treatment of nervous asthma, and of neuralgias, especially of the fifth nerve. The peristaltic movements of the intestines could be controlled by it in a remarkable manner, and both diarrhea and chronic constipation (when not due to fermentation) could be cured by it. In anomalies of menstruation, such as profuse menorrhagia, due to mental conditions, it was also of great value. One of the most useful fields in its application was found in masturation and satyriasis, and here it really acted as a specific. In the various forms of perverted sexual appetite, however, it did not offer such good results. In enuresis, by night or day, it was a useful remedy, though it required considerable patience to effect a complete cure.

Dr. Lichtschein thought that no harm could result from the judicious use of hypnotism. In the hands of the inexperienced, however, he believed that it was capable of producing serious injury, as it might cause a shock to the nerves which might eventually unbalance the nervous system. It should be used solely for its therapeutic effect, and only in the way of gentle persuasion. Therefore its practice by lay operators and in public exhibitions should be prohibited by law, as was now the case in Europe and in some of our Western States. He then gave a summary of five cases of different kinds which he had selected from those in which he had effected cures by this agent. In conclusion, he illustrated the various stages of hypnotic influence by means of two trained subjects, a male and a female. In the male the lower degrees were demonstrated, and in the female the higher degrees.

DISCUSSION.

DR. H. ERNEST SCHMID of White Plains, who was present by invitation, said that since he presented his paper on hypnotism before the State Medical Association, five years ago, he had paid much more attention to the psychical phenomena connected with it than to the practical bearings of the subject. As a result of his investigations, he was entirely opposed to the views of Charcot, and accepted those of Bernheim and Liebault. In his opinion, suggestion was the grand factor in the production of the results noted, and not hypnotism itself. He agreed with the reader of the paper that epilepsy had never been influenced by hypnotism. The cases in which cures were reported from it he believed were always instances of hysterical convulsions. He also agreed with Dr. Lichtschein that whatever benefit there was in the Keeley treatment was due purely to suggestion. During the past year or two strenuous efforts had been made to induce the legislatures of Massachusetts and Connecticut to force the medical authorities of the insane and inebriate asylums of those States to introduce this charlatan system into the institutions under their care; but as yet this outrage had not been consummated. It was certainly a curious fact that the State of Massachusetts, with all its boasted enlightenment, should be the first to bring up a bill in favor of charlatanism. The man of all others, he thought, who had been most successful in elucidating the *modus operandi* of hypnotism was Thomas J. Hudson. His idea was that there were two minds, an objective one and a subjective one. The one acted through the five senses, and the other acted by intuition. In this way every act of suggestion could be best explained, the objective mind operating on the subjective mind.

DR. WM. M. LESZYNSKY said it was evident, from the large audience present, that hypnotism had not lost its popularity, even among members of the medical profession. He had come expecting to hear the subject treated in a different manner, and hoped to find that the reader of the paper would say something in regard to the injurious effects of hypnotism. He was willing to concede that this agent had a beneficial influence in a small number of cases seen by neurologists, as, for instance, in some cases of neuralgia, but it was only in a small number. Even in its milder forms, it sometimes acted injuriously, and he had met with a number of such instances. One of these, in the case of a young girl suffering from classical hysteria, he related. Dr. Lichtschein had made the statement early

in his paper that it was not a universal panacea, and yet afterward he had appeared to claim that it really did cure almost everything. In neurasthenia, indeed, he had admitted that the cure took a long time. But in this affection almost any kind of treatment took a long time, and it might well be questioned to what extent any improvement noted was really due to hypnotism. As to facial paralysis accompanying hemiplegia, as the one was due to the same cause as the other, viz.: an organic lesion in the brain, he failed to see how this treatment could benefit one trouble, and yet not affect the other. In insomnia suggestion was no doubt of great value, and the fact was that herein we all practised suggestion on ourselves.

He had no wish to ridicule hypnotism. It was an interesting reality, although we did not as yet understand its phenomena very clearly. Nothing had been shown here to-night which threw any light upon the subject from a scientific point of view. We had all seen such demonstrations over and over again, and, although admitting the honesty of the trained subjects and the good faith of the operator, they proved nothing. All were satisfied, however, that hypnotism has its sphere in therapeutics; but, in his opinion, it was a remedy which could be used in only a few well-selected cases. He did not think that we were justified in making the attempt to hypnotize different patients to see whether they were susceptible to its influence or not. There were, indeed, many persons who, even under the most favorable conditions, could not be hypnotized at all.

In closing the discussion Dr. Lichtschein said that he agreed with Dr. Schmid that epilepsy could not be cured by hypnotism, notwithstanding the claims that had been made by some observers in regard to this point. As to the Keeley treatment, it was simply an abortive attempt at suggestion. The rest of his remarks were devoted to a reply to some of the criticisms made by Dr. Leszynsky.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, April 22, 1896.

The president, Dr. J. C. WILSON, in the chair.

DR. H. A. HARE reported a group of interesting cases. The first was one in which occurred attacks of epileptiform character, that were controlled by a regulation of the diet and the administration of antiseptic and purgative drugs. The second was in a boy, nineteen years old, who suffered from symptoms of digestive derangement and presented rhythmic contraction of both recti abdominis muscles on manipulation of the abdomen. Examination of the gastric contents disclosed the existence of gastric catarrh, with fermentation; and relief of all the symptoms followed lavage and regulation of the diet. The third case was in a boy of nineteen, with aortic obstruction, who presented signs of general peritonitis, with some symptoms suggestive of appendicitis. Operation was undertaken, the incision being made in the median line of the abdomen. The ileum was found obstructed by a band of adhesion, and the appendix inflamed and also adherent. Evidences of general peritonitis were present. The appendix was removed and drainage provided for. When the tube was removed at the end of thirty-six hours, vomiting and other distressing symptoms returned, to disappear upon the introduction of gauze packing. During convalescence, and for some time afterward, the patient suffered from attacks of vomiting and other symptoms suggestive of intestinal obstruction, but improvement usually followed upon regulation of the diet. The fourth case was one of typhoid fever in a man twenty-three years old, in whom a relapse followed the giving of broth and rice after the temperature had been normal for nearly three days.

In conclusion, Dr. Hare added that it was common in his experience with typhoid fever for either recrudescences or relapses to follow the too early ingestion of solid or semi-solid food. It would seem as though the change from a milk diet to other form of food, favored in some way renewed activity on the part of the typhoid, and perhaps other intestinal bacteria.

By invitation of the board of directors, DR. HORACE G. MCCORMICK of Williamsport read a paper entitled

"SOME OF THE THERAPEUTIC USES OF GUAIACOL."

He related that during the past two or three years he has employed topical applications of guaiacol in the treatment of forty-three cases of typhoid fever, in hospitals and private practice, equally divided between the two sexes, and covering wide variations in age. In all, 864 applications were made, the largest number in any one case being 78, the smallest 1; the largest dose was 25 drops, the smallest two. The greatest reduction in temperature was from 108.6° to 101°, with a corresponding reduction in pulse and respiratory frequency. Dr. McCormick has not found guaiacol, employed topically, depressing; on the contrary, with the reduction of temperature, the drug seemed to have a stimulating influence upon a weak heart. One case, that failed to yield to the ice-pack, continued for twelve hours, responded at once to guaiacol. The reduction of temperature effected lasts from three to four hours. At first chills occurred, but these were noted less frequently as experience taught the smallest dose necessary for the antipyretic effect. The applications were usually made in the right iliac fossa, the skin being washed with soap and water, then dried thoroughly, the guaiacol finally being dropped on the surface and gently rubbed in for ten or fifteen minutes. The part was finally covered with oil-silk or wax-paper. In a few cases local irritation resulted from the applications. Otherwise there were no unpleasant effects. Sweating occurred nearly always, and was proportionate to the reduction of temperature. In a case of pyemia with a temperature of 107°, repeated applications failed to bring about a reduction. It was admitted that the pyrexia of typhoid fever is not the disease, but it is an important symptom, and, when pronounced, it demands amelioration. The cold bath is also an efficient means of treating typhoid fever, but guaiacol has the advantage of ease and practicability of application, accessibility, inexpensiveness, freedom from contra-indications and bad effects, and of not arousing the objections of patients and their families. Guaiacol may also be used internally as an intestinal antiseptic, but thus employed, it does not reduce temperature. In cases of typhoid fever, such use is followed by a lessening of tympanites,

moistening of the tongue, and subsidence of delirium. The drug has been given in emulsion and in capsules, but its taste is disagreeable, and guaiacol carbonate may be given instead, in doses of 2½ grains.

Dr. J. V. Shoemaker stated that he had employed guaiacol, especially in the treatment of such diseases of the skin in which, formerly, it had been the custom to employ creosote and carbolic acid, *e.g.*, superficial epitheliomata, lupus vulgaris, and old ulcers. The remedy has also been employed topically, with success, in the treatment of orchitis and epididymitis.

Dr. H. A. Hare pointed out that guaiacol possesses pretty much the same powers and dangers as the coal-tar antipyretics—antipyrin, acetanilid, phenacetin, etc. It is, however, not so useful as the cold bath, intelligently applied. It must be remembered that fever has some protective influence, and may be viewed as the reaction of the organism to the invasion of the disease process. The cold bath does more than reduce temperature. It has, besides, a distinctly vitalizing influence, stimulating in general the functional activities of the organism. Dr. Hare criticised the routine employment of the cold bath, and maintained that this procedure is not to be pursued in every case, but only when other measures prove insufficient. The question is essentially one of dosage, and it is necessary to adapt the treatment to the disease as seen in individual cases.

Dr. J. P. C. Griffith contended that it was not possible to properly control the action of guaiacol applied topically as an antipyretic. It is difficult, if at all possible, to determine in advance how many drops of the remedy will be necessary to effect a given reduction in temperature. Experience shows the decline to be too great.

Dr. J. M. Anders related that, in an extensive experience with guaiacol, he had twice observed its application to be followed by a rise to a point higher than the previous maximum temperature. He had therefore abandoned its use in cases of typhoid fever, and had confined its employment to cases of subfebrile and afebrile disorders. Thus the drug had yielded good results in the treatment of myalgias and neuralgic pains. For this purpose, it was mixed with an equal part of glycerin and painted upon the affected surface. Dr. Anders has found that the hypodermic use of the drug proved even more effective than the topical application, a minim or two of guaiacol being mixed with ten minims of chloroform, and the dose repeated as needed.

Dr. Frank Woodbury pointed out that the action of guaiacol is probably to be attributed to its absorption into the blood and its influence on the thermic centers. Guaiacol has also proved itself useful in the treatment of pulmonary tuberculosis. It constitutes about sixty per cent. of creosote, which is the best single agent at present known in the treatment of tuberculosis. Carbolic acid and guaiacol do not act alike; the former is far more toxic. On account of its disagreeable taste, guaiacol has been superseded for internal administration by guaiacol carbonate. Under this plan of treatment, it has been observed that hectic is reduced and retrograde changes effected in the morbid process in the lungs.

Dr. S. Solis-Cohen stated that he had had an opportunity of seeing some of Dr. McCormick's cases, and had come to the conclusion that the patients had passed through a dangerous disease as safely and as comfortably as after any other mode of treatment. Nevertheless, he was unable to agree that the drug should supersede the cold bath. Briefly stated, it is an excellent means of treatment in suitable cases. Guaiacol, internally, is, like salol, an excellent antiseptic, and is capable of controlling the fetor of the stools. For this purpose, the carbonate and the salicylate may also be used. It is a fair question whether the reduction of the temperature in cases of pulmonary tuberculosis by means of applications of guaiacol really does good, and whether the patient is better off for it. The reduction is not permanent, and the applications, to be effective, must be repeated frequently. The matter of personal idiosyncrasy must be taken into consideration, some individuals reacting to a moderate dose, while in others a large dose induces but a slight effect. Applications of guaiacol seem to prevent the growth of the diphtheria bacillus in the throat. Dr. Cohen referred to two epidemics of diphtheria at the Pennsylvania Training School for Feeble-minded Children at Elwyn, in which the outbreak was brought to a close by the topical application to the throats of the healthy children of guaiacol, diluted with fifty per cent. of sterilized olive oil, with the addition of ten per cent. of menthol.

Dr. McCormick, in conclusion, replied that he had not observed any increased elevation of temperature after topical applications of guaiacol. The drug is, of course, not without its dangers, as all active medicaments are, but in the hands of the intelligent physician, these are minimal. Whether the application shall be made or not, must be determined in every individual case from the symptoms and general condition. Dr. McCormick repeated that while the fever is not the disease it must at times be treated, whether guaiacol or the cold bath, or other means are used for the purpose.

Dr. Joseph Price read a paper entitled

"RECTO-VAGINAL ANASTOMOSIS AND COMPLETE EXTIRPATION OF THE VERMIFORM APPENDIX."

The thought had suggested itself to him that in some cases of malignant disease of the uterus, with involvement of the bowel and adjacent parts, in which abnormal communications between the viscera are likely to occur, a cleaner and more radical procedure would consist in extirpation of the uterus and intestine, with the establishment of an anastomosis between the bowel and the vagina. He reported the case in which the hysterectomy was effected by the anterior method, incising anteriorly and retracting the bladder, opening the anterior vesico-vaginal pouch and tying backward. After completing the hysterectomy and amputating the diseased bowel, the proximal extremity of the intestine was stitched to the upper extremity of the vagina. The patient made an easy recovery with daily evacuations of the bowels after the fourth day. Dr. Price proposed also, in suitable cases, extirpation of the diseased appendix, cutting the organ out of the head of the cecum, and closing the incised opening with sutures. The operation has proved successful in a number of cases.

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ADDRESS OF THE PRESIDENT, R. BEVERLY COLE, M.D., OF SAN FRANCISCO.

AFTER a general introduction of historical character, Dr. Cole stated that the American Medical College Association, had within the past two years brought about great changes in the desired direction of higher education. It must, however, be admitted that improvement had been effected but very slowly, and that the usage of many of the schools to evade the laws established by the Association is so general that the good result is small, and the manifest reluctance of so many now within the organization to embrace the last advance, namely, the adoption of the four years' requirement, gives but little promise for the future. Just so long as the examinations for matriculation are conducted by members of the faculty of medical schools, just so long will evils continue, and so long as the professional examinations for degrees are conducted by interested parties, just so long will the ranks of the noblest profession be filled with uneducated, untrained, so-called doctors.

Relative to making examinations for life insurance companies, he said that no man qualified to make a thorough examination, such as is required by insurance companies, if he be properly imbued with the value and importance of his services, will, or can assume the responsibility attaching to his function as an examiner without an adequate return. Surely the fee of five dollars was small enough, and the offer of any less sum is simply an insult to the educated physician, and a bid for cheap, unscientific service, which can be obtained from the ranks of the unskilled and irresponsible. Let every examiner plant his foot firmly and decline employment without adequate compensation; let it be published to the world that certain companies employ incompetent men, or by paying cut fees receive cut services, and very soon they will discover their mistake and be brought to the realization that the best and most skilful services command the best prices.

Another question of grave importance and to which he thought the Association should take cognizance and suggest a remedy, was the total absence of reciprocity between the United States and foreign countries as to laws governing the right to practise. Why Americans should be required, when taking up their abode in Germany, Great Britain, and even in the territory of our first cousin, Canada, to undergo an examination preliminary to securing a license, while our portals are floodgates through which every country of the earth pours its surplus of medical men, or rather, to put it more correctly, why our country should receive with open arms, without hindrance, the excess of product of foreign schools without requiring of them the same as is required of us, he could not see, and he was distinctly of the opinion that the time had arrived when the matter should be earnestly considered and something done to arrest the strides of this rapidly growing wrong.

He had noticed with inexpressible pleasure, the action taken by the Association at its last meeting, together with the hearty support at the hands of of the State Society of Pennsylvania, so far as the advertising columns of the *Journal* are concerned. In this case the reform commenced at home, and Dr. Cole said we should carry it further and apply it to individuals.

Equally gratifying is the effort now being made asking Congress for an additional member of the cabinet, who shall be known as the Secretary of Public Health, and who shall be head of a department to be known as the Bureau of Health, which will have general charge of health matters as well as statistics. Such a department would be of incalculable utility and value, and the measure should by all means possible be vigorously pushed forward.

While the year just passed had been marked by several important discoveries of scientific value, the usual advance in the line of medicine and surgery had been made, but he feared that the tendency to push surgery to the exclusion or

neglect of medicine, was becoming glaringly conspicuous. It would seem every tyro imagines that surgery offers the quickest route to success, and that fame is to be attained only through blood; hence every case, the symptoms of which are directed to McBurney's point, was necessarily a case of appendicitis, for which the only sovereign remedy was the knife; or if it be a woman, and her suffering is referred to the ovarian region, or she has a fibroma, very small and barren of symptoms of importance, not only must she be subjected to celiotomy at once, but in nine cases out of ten, is her uterus, or uterus and ovaries, sacrificed, thus unsexing her without the slightest effort being made to spare these organs and preserve to the woman her distinguishing function. If the same practice prevailed to emasculate every man who might have a neurosis of the cord and neighboring organs, there would be fewer operations than are now done on women for no greater cause.

The mere fact that the improvements and advancements in surgical procedures make them relatively safe, should not be advanced as an argument, and he looked with suspicion upon the surgeon who might claim that as no use can be assigned to the appendix vermiformis, it should, upon the slightest provocation or excuse, be removed. Is it not time that a halt should be called, and that such cases should be assigned to those who are expert in diagnostic technic as well as surgical procedures? Can any law of either God or man be found to justify oophorectomy or hysterectomy except under the most dire conditions?

ADDRESS ON MEDICINE,
BY WILLIAM OSLER, M.D.,
OF BALTIMORE, MD.

THE STUDY OF THE FEVERS OF THE SOUTH

[BY TELEGRAPH.]

HUMANITY has but three great enemies: fever, famine, and war, of which by far the greatest, by far the most terrible, is fever. It is worthy of comment that three of the greatest benefits conferred on mankind, beside which it would be hard to name three of equal importance, have been in connection with the fevers, the introduction of cinchona, the discovery of vaccination, and the announcement of the principle of asepsis. The differentiation of special forms of the continued fevers, and particularly that of typhoid, forms one of the most interesting chapters in medicine.

It is a very gratifying sign to notice the attention which has been given of late to the subject of typhoid fever in the South. Some years ago a good many physicians resented the imputation that the disease, to any extent, prevailed in the Gulf States.

I have been in the habit for several years of reading the reports of the discussions on this subject at the New Orleans Parish Medical Society, and they had been interesting as showing a progressive development of knowledge such as comes to all of us with fuller study of any problem. Enteric fever presents no constant picture. On the contrary, scarcely any disease has a more varied symptomatology. The fever may be said to be invariable, though afebrile cases are not unknown; but in the features of onset, in the length of its course, in the presence or absence of symptoms regarded as cardinal, such as rose spots, diarrhea and splenic enlargement, typhoid fever is so uncertain that the diagnosis is often dubious.

Advances in the treatment of fevers and especially of typhoid, have not kept pace with the rapid progress in our knowledge of the etiology. Think of the misery, the tediousness, the discomfort of a typhoid case with three relapses; think of the bleeding, the blistering, the purging, from which at least our fever patients of to-day are free. Contrast with the former methods the care, the gentle nursing, the scrupulous cleanliness, the abundance of cold water to drink, and fresh air which typhoid fever patients of to-day receive. I would claim the privilege of a faddist to abuse roundly other faddists who did not swim in my puddle.

As a strong advocate of hydrotherapy, I take especial pleasure in denouncing as heretics of the worst possible stamp the advocates of the so-called antiseptic and abortive methods of treatment of typhoid fever. I would place the man who does not also give a purge, in a limbo just a little less hot, as he probably does a little less harm. Scarcely a week passes in which I do not receive a temperature chart of some case of typhoid fever which has terminated spontaneously on the twelfth or fourteenth day, as a triumphant demonstration of the value of drugs, which, from my point of view, might as well have been given *per cutem* in the tub. At present, I am, however, so wholly opposed to cold water practices that I confess to be anything but an impartial critic. The advocates in this country for the abortive and antiseptic plan of treatment must bring forward a much stronger body of evidence than has been presented before they can hope to carry conviction to the skeptical. To claim an abortive treatment of typhoid in a case in which, on the

thirteenth day of the illness and on the seventh of the treatment, a patient died of intussusception as "cured of his typhoid fever on the seventh day of treatment," when the autopsy showed "the characteristic and extensive ulceration of Peyer's patches and tumefied mesenteric glands," is to talk a language unintelligible to an educated medical man, and is nothing short of midsummer madness.

Full clinical histories should be furnished of typhoid fever cases, and any one who wishes to contribute to the subject should not be too busy, not only to make a careful, critical study of the symptoms, but to jot them down in some order so that at least they may be intelligible to others. The second point is the necessity of obtaining autopsies in fatal cases. We all appreciate how difficult this is in private practice, but in determining the nature of obscure atypical cases of fever, it is absolutely essential. There is not a hospital in the country in which the determination of the nature of an obscure case of fever is not settled by the autopsy alone. Thirdly, it is essential that observers who undertake to study this question with thoroughness should approach it with a full acquaintance with the varieties of the malarial parasites, and with an accurate knowledge of bacteriological technic.

To us, as a profession, belongs the chief glory of the century. Enormous as has been the advancement in material prosperity, and widespread as has been the diffusion of benefits from the development of the physical sciences, they cannot compare with the progress which has been made in the relief of suffering and in the prevention of disease. Our work here ranks among the most memorable achievements in the history of the race. Fever in its various forms is still with us, and the century has seen in connection with it but one discovery of the first magnitude, but it is of almost equal importance to know that the way has been opened and that the united efforts of many workers in many lands are day by day disarming this great enemy of the race.

ADDRESS ON SURGERY,
BY NICHOLAS SENN, M.D.,
OF CHICAGO.

SOME OF THE LIMITS OF THE ART OF SURGERY.

Modern Surgery has attained a degree of development which entitles it to the distinction of a science and an art. As a science, surgery is of recent date, having been founded and perfected during the last half of the present century. As an art it has been practised for centuries by our ancestors, with credit to themselves and benefit to the injured, the crippled, and the sick. When Boyer wrote the introduction to his classic work on surgery he expressed the conviction that surgery had reached perfection. How little did he dream of the great changes that would be wrought in the practice of his cherished profession by the progressive pathologists and surgeons of the next few generations. What a contrast between the standing of the surgeon of to-day in the community, the profession, and, from a scientific aspect, as compared with his colleagues of only a century ago!

Modern pathology and the new science of bacteriology have laid a permanent foundation for the steady and progressive advance of surgical thought and work. The inflammatory complications of wounds and the etiology of most of the chronic infective surgical diseases have been cleared up by bacteriologic investigations during the last twenty-five years, and the knowledge thus gained has enabled the surgeon to prevent, in a large measure, the former, and to treat intelligently, and with increased success, the latter. The wonderful development of operative surgery, during the same time, is one of the earliest and richest fruits reaped from the vast and fertile field sown and cultivated by bacteriologists of every civilized nation. Antiseptic and aseptic surgery have smoothed the rough and rugged pathway of the practical surgeon.

The almost universal introduction of antiseptic and aseptic precautions in the treatment of wounds in private and hospital practice has nearly eradicated the three greatest enemies of the surgeon of old, namely, hospital gangrene, erysipelas, and secondary hemorrhage, and minimized the occurrence of suppuration and its manifold immediate and remote complications.

The *furor operativus* manifested in special departments of surgery, and its obvious results, render the standing and legitimate scope of the general surgeon very uncertain and indefinite at the present time. Let the general surgeon turn to the right or to the left, advance or retreat, and he finds himself on reserved territory. As for the physician, he is expected to answer night-calls, prescribe for diarrhea and whooping-cough, watch cases of typhoid fever, measles, scarlatina, and smallpox, and should complications arise, and he does not report to the proper authority, he renders himself liable to censure. Much of this ill-applied energy in the surgical world has resulted in detri-

ment to patients and in retarding actual surgical progress. Operative surgery has been carried to extremes.

The employment of antiseptic and aseptic precautions in the treatment of intestinal and accidental wounds has greatly diminished the frequency of progressive phlegmonous inflammation and its often disastrous consequences. That such an occurrence cannot always be prevented, even by the most scrupulous care and attention to details, every surgeon of experience is willing to admit. In the most virulent forms of phlegmonous inflammation the most heroic and timely treatment, local and general, is often fruitless in averting speedy death. In the most desperate cases the surface lesion is often insignificant, the infection following the lymphatic pathways, soon reaches the general circulation resulting in death from acute sepsis before any decided gross pathologic lesions have appeared at the seat of infection or in any of the internal organs. How rapidly general infections may take place has been shown by the experiments of Schimmelbusch, who found micro-organisms in the spleen five or ten minutes after infection of a wound. Colin and Niessen demonstrated by their experimental work that amputation a few minutes after inoculation of the ears and limbs of rabbits with pure cultures of anthrax did not protect the animals against generalization of the disease. Such cases in the human being fortunately are seldom met with, but when they do occur, the art of surgery is powerless in arresting the progress of the disease. Parenchymatous injections of solutions of carbolic acid or corrosive sublimate along the course of the inflamed lymphatics, and the internal use of alcohol in heroic doses promise the most, but in the great majority of cases the extension of the infection continues and terminates speedily in death from general sepsis. In the treatment of diffuse phlegmonous processes it is now customary to make free incisions, establish free drainage, and disinfect the cavity by flushing it freely with a safe and yet efficient antiseptic solution, such as a saturated solution of acetate of aluminum, a three per cent. solution of carbolic acid, or a 1–5000 solution of corrosive sublimate and apply to the part hot compresses wrung out of the same solution.

Closely allied to phlegmonous inflammations of the soft tissues is acute suppurative osteomyelitis, as it is caused by the same kinds of microbes, and results in more or less extensive destruction of tissue. The etiology and pathology of this disease are now well understood, and upon them is based the early operative treatment, which is generally indorsed by the profession at the present time. The early removal of the osteomyelitic product by operative interference, as a rule, relieves pain promptly, limits necrosis, guards against joint complications, and reduces the danger from general sepsis. Immobilization of the affected limb, in proper positions, and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis can be made, are the modern resources, which have succeeded in greatly reducing the mortality of this disease, as well as its immediate complications and remote consequences.

Only a few years ago, the surgeons who paid special attention to diseases of the joints were enthusiastic advocates of early resection or arthrectomy in cases of tubercular joint affections. It was believed that such radical treatment would succeed in eliminating the local affection and in preventing the extension of it to distant organs by reinfection from the peripheral focus. Statistics prove that these hopes are unfounded, and conscientious surgeons have substituted largely in place of operative treatment, conservative measures. A change in practice has taken place, largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform and glycerin. Resort to this treatment has been made in hundreds of cases, with the most satisfactory results. In about one-half or two-thirds of all cases of uncomplicated joint tuberculosis, this treatment proves curative. It is of special value in the treatment of tubercular abscess in communication with a tubercular joint or bone. From one to three or four injections usually suffice in obliterating the abscess cavity.

In considering the subject of malignant tumors, it must be acknowledged that the essential cause of carcinoma and sarcoma remains to be discovered. The science of surgery must first divulge the true nature of tumors before we can expect a decided advance in their more successful treatment. The essential features of the modern treatment of malignant tumors may be summed up very briefly as follows: Operate early and thoroughly. The treatment of inoperable sarcoma by injections of the sterilized toxins of the streptococcus of erysipelas and the bacillus prodigiosus has not fulfilled our reasonable expectations.

Operative interference is absolutely indicated in fractures of the cranial vault under the following circumstances: (1) All open fractures, including gunshot and punctured fractures. (2) Depressed fractures, attended by well-defined

symptoms, caused either by the depression or intracranial complications. (3) Rupture of the middle meningeal artery, with or without fracture of the skull. The indiscriminate use of the chisel and the trephine in the hands of the inexperienced practitioner is fraught with danger, and should not be encouraged by teachers and expert surgeons. Cerebral localization and aseptic surgery have made it possible to treat a few intracranial lesions successfully by direct operative interference.

The abdominal cavity was largely *terra incognita* to the surgeon of less than half a century ago. Today it is the favorite battle-ground of the average surgeon, and the select field of the so-called abdominal surgeon. Notwithstanding the wonderful improvements in the technic of operations upon the stomach, partial gastrectomy and pylorectomy have yielded anything but encouraging results. In nearly fifty per cent., the patients subjected to radical treatment for malignant disease of the stomach succumbed to the immediate effects of the operation. The speaker has opened the abdominal cavity for the surgical treatment of malignant disease of the stomach nineteen times, and only in one case did he find the disease limited to the organ first affected, and in this case the general health of the patient had been so much deteriorated by the obstructive pyloric carcinoma as to contraindicate a radical operation; in all of the remaining cases a pylorectomy or partial gastrectomy was out of the question, as the carcinoma of the pylorus or stomach had extended to adjacent organs, or had given rise to regional infections through the lymphatic glands sufficiently to contraindicate any attempts at radical removal of the disease.

The greatest onslaught of modern surgery has been upon the organs of generation, male and female. The future historians who will record the work of many gynecologists belonging to the present generation will have reason to express their surprise at what disasters the art of surgery has produced when plied in cases far in advance of a scientific foundation. Here and there we hear a feeble voice protesting against the indiscriminate surgery upon the organs of generation of the opposite sex, but the mutilating work continues in spite of such opposition and well-meant advice. When we arraign the gynecologists before such a representative body composed of representative medical men of this country for innumerable and inexcusable transgressions of the rules which ought to govern and control the art of surgery, we do not include the scientific, conscientious workers in that department of surgery, but our remarks apply to a class of routine operators which have recently grown to alarming dimensions not only in this, but in nearly every country which has been penetrated by the dim rays of so-called bold surgery. The new generation of doctors finds no longer satisfaction in practising their profession in some rural district. They have their eyes on large cities and have heard of enticing fees paid to specialists for insignificant operations. Why buy a horse and saddlebags when a fortune awaits them in devoting themselves to a specialty, more particularly gynecology? The recent graduate or the man who has become disgusted with country practice seeks a much employed gynecologist, follows his work for a month or two and returns to his prospective field of labor a full-fledged specialist. He is now ready to extirpate the uterus, remove ovaries and Fallopian tubes, sew imaginary lacerations of the cervix and perineum. Do you suppose that such an aspirant for gynecological fame ever examines a woman and finds her perfect? Is it not true that in nine out of ten cases he finds something to mend?

Laceration of the perineum is a favorite subject of the amateur gynecologist. The extent of laceration and the symptoms caused by it are not always carefully considered in deciding upon the propriety of an operation. The performance of an operation on the perineum in five or seven minutes still serves as an attraction for the lookers-on in many private hospitals and gynecological clinics.

The frequency with which women are being castrated is one of the most flagrant transgressions of the limits of the art of surgery. It is not unusual for one operator to exhibit five or six normal ovaries as the result of half a day's work. All kinds of excuses are made for this kind of surgery. Where is this wholesale unsexing of our female population going to end? The beginning of the end has come. The army of women minus their essential organs of generation is beginning to raise its voice against such mutilating work. The number of women who willingly sacrificed their ovaries to restore their shattered health without securing the expected relief has increased to an alarming extent. This sad experience has made the gynecologists more desperate and bold. It is difficult to say where this rage for the removal of the female sexual organs will end, or what organ will be the next battle-ground for the aggressive gynecologists. The clitoris, the vagina, the cervix uteri, the ovaries, the Fallopian tubes, the uterus and its ligaments, have success-

ively passed through a trying ordeal of operative furor. What the next fad will be is impossible to foretell.

The subject of genital surgery should not be dismissed without making a strong plea in favor of conservatism in the treatment of prostatic hypertrophy. Allusion is made to this subject because it is feared that when this operation on aged men for hypertrophy of the prostate becomes common property, and is indorsed by surgeons of high standing, it will be misapplied in the same way, probably to a lesser extent than the removal of normal ovaries. Men will be castrated for stone in the bladder, chronic cystitis and malignant disease of the bladder. It is not always easy or possible to make a positive differential diagnosis between simple hypertrophy of the prostate and some of the conditions which simulate it so closely. In doubtful cases it would be advisible to make the diagnosis sure by a suprapubic cystotomy before resorting to a mutilating operation, rather than remove the testicles and later discover an encysted stone or malignant disease of the bladder or prostate. Castration is such an easy operation that every tyro in surgery will be tempted to perform it upon willing subjects suffering from obscure affections of the bladder, complicating hypertrophy of the prostate gland. The Ramm-White operation deserves fair trial at the hands of competent surgeons, in well selected cases, but evil is apprehended in the future, not so much from the proper use as the abuse of this procedure.

ADDRESS ON STATE MEDICINE, BY GEORGE H. ROHE, M.D., OF BALTIMORE.

THE PURIFICATION OF WATER SUPPLIES

The most vitally important sanitary problem confronting American municipalities at the present day is, unquestionably, the supply of pure water for drinking and other domestic purposes. The widespread prevalence of typhoid fever may be practically looked upon as a result of the pollution of the drinking water. The importance, therefore, of having the latter of a pure quality is self-evident. In 1894 twenty-five of the principal cities of the United States had an average typhoid mortality of 39.6 per one hundred thousand of their population.

The numerous epidemics in this country and abroad, which have been studied with so much care by eminent sanitarians, have demonstrated the relation of infected drinking water to typhoid fever. While cases doubtless occur in which the disease cannot be traced to the water supply, these constitute the vanishing minority. In epidemics of cholera a similar relation exists between the outbreaks and extension of the disease to an infected water supply.

Pure water, or water free from all sorts of uncleanness is demanded to-day by the "sanitary conscience" of the public. We are therefore reduced to one of two alternatives, either to prevent the access of impurities to the sources of supply, or else to resort to some method of purification of the water itself. The City of New York has recently chosen the first alternative by purchasing large tracts of land bordering upon its source of water supply. By the removal of sources of pollution from the area of land so acquired the endeavor has been made to secure a pure drinking water. But the expense has been something enormous.

In Chicago, the extraordinary epidemic of typhoid fever from 1889 to 1893, led to the extension of the intake pipe in Lake Michigan to a distance of four miles from the shore. Since then, the typhoid mortality has been reduced from 159.7 per one hundred thousand in 1891, to to 31.4 per one hundred thousand in 1894.

In most instances, the changing of the source of water supply is quite impractical. Fortunately, there is at our hand, however, a means by which a source of supply once polluted or constantly polluted, can be rendered pure, namely, by filtration.

Formerly, filtration simply meant straining out from water all gross impurities, thus changing a dirty or muddy water into a clear and limpid fluid. It did not contemplate the changing of organic compounds into inorganic compounds, or the removal from the water of minute organisms, which we have learned to recognize as the causes of specific diseases. We now know that water may be perfectly clear and limpid, and yet be extremely impure. We also know that sewage water, full of organic matter and teeming with manifoid micro-organisms of various kinds can be rendered absolutely pure by filtration.

The experiments by the Massachusetts State Board of Health, conducted at Lawrence by Mr. Hiram F. Mills and Mr. Allen Hazen, proved conclusively that water, no matter how polluted, can be rendered absolutely safe and pure by simply filtering the same through sand-filters, provided certain conditions are observed regarding the construction of the filters, the rate of filtration, etc. Comparative studies of the efficiency of sand-filters and various processes of so-called

"mechanical filtration" confirm the opinion that sand filtration gives the best results in purification, at the lowest cost of construction and maintenance.

Koch discovered that the real filtration does not take place in the sand, but that by deposit from the polluted water a layer of mud is formed on the top of the sand, and that it is this layer of mud which retains the suspended constituents of the water. In the process of filtration, the important point is, first, that a proper layer of slime should be formed and that it should not be disturbed during the process of filtration, and that when, by further continuous deposit, it becomes too thick, and therefore, too impermeable to water, it should be removed. It has also been discovered that in the gradual wearing out of the sand layer it should never be allowed to get below a certain thickness—about 30 cm.—and that a certain speed, about 100 mm. per hour, must be maintained of the movement of the water through the mud layer. Daily or tri-weekly examinations of the water by a bacteriologist determine whether the filter is working properly or not.

London has used this system of sand filtration for her drinking water for upwards of forty years. The filter-beds of Berlin cover an area of thirty acres.

The cholera epidemic of Hamburg in 1892 furnished an object lesson of great value. Hamberg and Altona both draw their water supply from the river Elbe. In Hamburg the water was furnished direct to consumers without filtration; in Altona the water had been systematically filtered for a number of years. The Hamburg supply was drawn from the river at a point where there was comparatively little pollution, but the Altona supply came from the stream after it had received the sewage of the city of Hamburg, numbering eight hundred thousand inhabitants. Moreover cholera bacteria were even discovered in the Elbe water below the outlet of the Hamburg sewers.

In Hamburg about twenty-one thousand persons were attacked with cholera, of whom more than eleven thousand died during the epidemic. In Altona on the other hand there were five hundred cases, four hundred of which were shown to have been importations from Hamburg, thus leaving only one hundred cases traceable to infection in Altona. A remarkable improvement in the prevalence of typhoid fever attended the introduction of sand filtration at Lawrence, Mass.

In sand filtration, two processes must be kept in view; one, the straining out of the bacteria, and the other, the conversion of the organic matter into inorganic compounds. These imply, that the materials of which the filter is composed shall be sufficiently fine to hold back all suspended matter, and that a sufficient supply of oxygen shall always be present to oxidize it. In most natural waters, there is a sufficiently large quantity of free oxygen present to cause the oxidizing processes to go on continually, but in extreme cases of pollution, an extra supply of oxygen is necessary. This may be supplied by aeration of the water before filtration, or by conducting the filtration intermittently.

On the whole, it is probable that sand filtration must be regarded as the most efficient method of purifying a polluted water supply; and that, when carefully and intelligently managed, it can be depended on as a perfect safeguard against infection from that source.

THE PRESIDENT'S ADDRESS DELIVERED BEFORE THE ASSOCIATION OF AMERICAN PHYSICIANS, AT ITS ELEVENTH ANNUAL MEETING AT WASHINGTON, D. C., APRIL 30, 1896.

BY A. JACOBI, M.D.,
OF NEW YORK.

GENTLEMEN: The scrutiny of the program you have prepared for this meeting of the Association of American Physicians, yields an eloquent exposition of its scope and aims. The fellows who are offering their contributions to the discussions of these three days, have in the distant parts of the country, each by himself, and unknown to their far-away cooperators, acted the parts of different constituents of an organism. Indeed, whatever conduces to make up internal medicine, from the special biological study of a coccus to the prognosis in a particular disease, from the etiology of a morbid condition to its therapeutics, from the consideration of a local ailment to that of public hygiene, is well represented. Gathering up the apparently detached threads, I therefore find it far from difficult to express in a few words what I consider to be the relation of medicine, such as it is exhibited in this Association and on its program, to medicine as it is taught and practised, either undivided or in its specializations, and of this Association to its national sister societies.

At a time when a number of national special organizations had been in existence several years, it was founded, I take it, because the leaders felt that the natural tendency to the division of scien-

tific labor should be, not checked, but guided by a controlling hand, and that the independent position of internal medicine should be demonstrated and vouchsafed.

Since Boerhaave, aye, since Galen, specialties branched off from the original trunk of medicine. The accumulation of experience, the multiplicity of observers, the increasing depth of studies, the perfection of tools and instruments, and the limitation of the capacity of individual practitioners, at one time even the dictates of the Church have from century to century, and lastly, from decade to decade, added to the number of specialties in practice and of specializations in study. Indeed, at the present time, a medical man may do his full duty to his profession, be an expert largely quoted, the first among his peers, and a peer among the first, an authority of the first rank, without ever having paid the slightest public attention to the demands of social hygiene, or for years seen a single sick-bed. On the other hand, there are those most of whose time is spent and efforts exhausted in attending to the sick, both in hospitals and private dwellings. Their observations may be quite as correct as those of the microscopist and experimenter, but they are not so easily proven to be so. In their case it takes, as a rule, a large number of statistical data to establish facts as truths and worthy of acceptance, for, indeed, truth is not so simple as many a proverb will have it. The reason for this is manifest. The object of the microscopist is single, is one, and still mistakes are made; for explanations differ in regard to what has been seen, and corrections and refutations are numerous. That of the physician is complex, therefore more difficult. His subject is man, and usually man whose physiological functions are disturbed by a pathological process. His work is also more comprehensive, his aim higher than that of a practical specialist who claims to deal with a single organ. When we look upon modern specialties as they frequently are, not as they ought to be, practised, we have to admit that they suffer from the danger of limiting the view of the practitioner. An isolated organ is the center of his perpective, and everything not enclosed in his field of vision, which is occupied by the organ of his choice, is doomed to remain insignificant in his estimation. Moreover, the mercantile and mercenary spirit of the end of the century matures occasional eagerness for early reputation and social and financial success. The public is easily impressed by visible manipulations and manual dexterity, and unable to follow or correctly rate the results of unobtrusive and unornamental brainwork. Thus it is, that to establish himself in reputation and standing among laymen, it takes the accomplished physician as many decades as the young specialist years. On the domain of practical medicine, the specialties have gradually encroached. No cavity but has been invaded by the surgeon, no special organ ever so small but what has been appropriated by a specialist. Is it true, however, that medicine becomes more surgical or specialistic? Is it not rather to be demanded that surgery and the rest of the specialties should remain, or, more than hitherto, become medical?

It is not given to me to value scientific labor, beyond the personal happiness conveyed to the searcher for truth by the broadening of his mental horizon and by revelations never manifested before, except by the good it does to the race. *Nisi utile est quod faciamus stulta est gloria.*

The researches which have contributed most to the success of all branches of *surgical* medicine are the same that have added to our knowledge of a large number of infectious diseases and benefited both private and public hygiene. That is where the bacteriological hermit, the studious histologist, the bedside practitioner, and the public statesman join hands. That is where medicine proves itself to be the benefactor not only of the individual, but of mankind. Political economy and individual and public hygiene are equally interested in the progress of medicine. When society will have passed beyond the mire of mercenary wire-pulling and bickering, when every man will be a political being in the sense of Aristotle, with the tendencies of the statesman rather than those of the politician, when the welfare of the people and race will be the only aim of enlightened representatives, then the medical man will be either the legislator or his adviser, and medicine will take the place occupied in remote medieval times, before there were so many churches, by the Church. But to accomplish that end medicine must remain one and indivisible.

Looking over the programs of the Climatological, Pediatric, Gynecological, Neurological Associations, and the rest, you recognize subjects familiar to yourselves. Let them acknowledge their origin, and the ties are no longer severed. Surgical *science* is medicine. Its *art* only is what constitutes the specialist. The methods of surgical diagnosis are medical. The very sources of its practical success are the pharmacological, biological, and histological laboratories. The very best minds of both hemispheres were always

anxious to enforce the union of the *disjecta membra*. No science deserves its name unless enlivened by this idea. Imagine, for instance, anthropology to relinquish its throne and acknowledge the independence of its different branches. The collective studies of crania, or of hair, the peculiarities of the Esquimo tribe, the relationship of languages, they are branches of and contributions to science, not sciences. This knowledge of consanguineous unity was the cause of the formation of our triennial congress. From that point of view this Association, with its annual meetings drawing on, and combining as it does pathological anatomy, histology, bacteriology, chemistry, physics, and all the practical aids offered by the mechanic, the optician, and by all the specialties, whose number leaves nothing to be desired beyond that it might be smaller, and with its constant contact with the interest of the commonwealth, takes the place of the triennial congress. One of the wisest members, in my opinion, of this Association was once asked by me what he did in a certain case. His answer was: "Among other things, I prescribed a surgeon." One of the leading specialists of the country told me after he had inspected a volume of our transactions: "I know how to operate on an eye, and now and then I succeed in making a good brain diagnosis. After all, however, we do retail work. When I want statesmanship in the profession I look to internal medicine."

Among the constituents of scientific and practical medicine there is one which has not yet succeeded in conquering its legitimate place, viz., therapeutics. Fifty years ago in Vienna, and where its influence was paramount, the interest in man began at the autopsy. It had become, and occasionally still is customary, even with large minds, to scoff at the value of internal therapeutics. The effects of the knife, the actual cautery, the tourniquet, the local applications on the integuments are readily conceded. But the natural difficulties of directing and controlling the action of drugs on distant cell conglomerates, either fluid or solid, are often emphasized and exaggerated into alleged impossibilities. That is a mistake, for the merely empirical character of therapeutics, which, after all, has a value of its own, is to a large extent superannuated. The diagnostic methods of Laennec (with whose illustrious name that of Auenbrugger ought always to be thankfully remembered) and of Skoda, and the introduction of the thermometer by Wunderlich, enabled us to prove some of the local or general actions of medicines. The efficacy of local treatment was proven by Hebra in the treatment of scabies, in the very face of the nihilistic school of Vienna. Pravaz's invention, as ingenious as it was simple, facilitated local administrations with tangible and instantaneous effects. The separation of alkaloids, beginning with that of morphia in 1817, strychnia in 1818, caffein in 1819, added to the accuracy of effect and of observation. Experiments with drugs on animals have vastly contributed to the exactness of our medication, though it is true that every newly discovered fact is liable to be accepted or not with the protest that whatever happens *in corpore viti* need not be applicable to man. In that way we are mainly indebted to Wepfer who worked as early as 1679, to Magendie and his pupil, Claude Bernard, and to the greatest of them all, Karl Ludwig. Nor was it animals alone that were utilized to accomplish accuracy in the application of medicines. Observation of their action when they were given to the well and the sick has vastly increased our knowledge in spite of the absurd caricatures furnished by that erudite quack, Hahnemann.

Nor has chemistry and pharmacology, which was in due time separated from pharmacy, been idle. The changes undergone by medicinal agents were studied by Mitscherlich, Schmidt, Wormley, Horatio C. Wood, and Schmiedeberg, and the dependence of the effects of medicines upon their chemical structure by Richardson, Brown, and Frazer, with the final result of creating through synthesis new and powerful agents. One of the most promising observations was this, that certain bacteria are capable of immunizing animals against the action of certain poisons, either through the metabolic products of bacteria, or by the very serum alone of such immunized animals. Finally it was found that as the absence or the diseased condition of the thyroid gland caused serious disorders, so some of the latter could be corrected or cured by the administration in different ways of thyroid tissue or its extracts. These very facts, and the results of serum therapy, and the promises of organotherapy in general, which we expect to be fulfilled in the near future are most hopeful signs. We are, therefore, amply justified in believing that internal medicine will soon reap many of the fruits, thus far harvested by external medicine, from the fields of biological and bacteriological laboratory work.

This is more than hope. It is the more a certainty the more surely and frequently physiological and pathological functions are shown to be chemical. Bacteriology, advanced as it is beyond tentative beginnings and the overbearing claims of

youthfulness, does no longer pretend to cover the field of etiology. It recognizes the difference between the entity of a disease and its cause. All organic changes in the cells and protoplasm are either physical or chemical, or both. Bacteria cause local infection, usually primary, rarely metastatic in character, but never the constitutional symptoms of a disease. These are produced either by proteins or toxins, the products of the very microbic bodies, or ptomaines, the products of the cells in which the presence of microbes worked an abnormal metamorphosis. The latter, however, does not result from bacteric influence only. Chemical, mechanical, thermic changes, are apt to influence the normal vital processes, which again impress, or are impressed by, the peculiar individual disposition created by age, hereditary influence, previous illness, state of nutrition, nerve force, and the conditions of rest or exhaustion. What a wonderful and complicated chain of mutual influences and possibilities, and what subjects for study for this Association.

The normal vital processes depend on two powers, the cells and the blood.

The very structure and function of the former are acted upon or built up by the latter. Thus it appears as our master Virchow has lately pointed out, that finally we return to a species of humoral pathology, but not indeed to the crases and diatheses of old. For modern humoral pathology looks for the presence in the blood of actual agents mostly of chemical nature. Part of them has been shown to be so; in the case of others we have to rely on inferences. Still, with peptones, aceton, sugar, with acetic, lactic, oxalic, uric, and oxybutyric acids in the blood we are fairly acquainted; and the discovery of Fraenkel's thyreo-antitoxin proves to what extent the action of the organic juices is mainly, if not altogether chemical.

The interests of the practitioner and his patients, of medical science and the commonwealth, are equally served by these views when tested by practice. As an Association we have to deal with the interests of science and of the community; of the latter even more than it is willing to understand or to admit. We, however, need not be exhorted to continue our work. The misunderstood sympathy with the alleged sufferings of animals, and the agitations of the anti-vivisectionists —no matter whether merely misinformed or fanatical—must not swerve us from studying, from learning, and from serving mankind by combining our efforts for public purposes. The hygienic interests of the community are, or ought to be, in our keeping. Your Association being the scientific representative of internal medicine in America, ought to be recognized all over the Union as the scientific law-giver. What the New York Academy of Medicine is calculated to become for New York City, this Association ought to be able to be for the Union and beyond it through the scientific labors of its members. In order, however, to attain this destiny, let us not forget that medicine must be one and inseparable, now and forever.

Some of our colaborers have left us during the past year. Dr. James Edmond Reeves, who was a member since 1887, and died at Chattanooga, Tenn., on January 4th, at the age of sixty-six years, was one of those who happily blended a strictly scientific ambition, as exhibited by his "Practical Treatise on Enteric Fever," and his "Manual of Medical Microscopy for Students, Physicians, and Surgeons," also by his paper contained in Vol. V. of our Transactions, on "Some Points in the Natural History of Enteric or Typhoid Fever," with a sense of duty both as a public servant and a citizen. From his early professional years he interested himself, both as a fellow of scientific societies and as a health officer, in public hygiene. He was the author of the law creating the State Board of Health of West Virginia, and it was he who felt bound and was able to take up, single-handed, a successful fight against a "consumption cure." At a time when the practice of medicine is frequently degenerating into a trade, and the number of quacks, and especially consumption quacks, is swelled even from among the ranks of men armed with medical diplomas and possessed of official positions, his undoubted courage and moral strength are bright examples that should not be forgotten. What I said of the combination of special medical interests, and the instincts and aims of a good citizen, is also due to the memory of Dr. James West Roosevelt, who died in New York on April 11th. He was, though a member of this Association since 1889, one of the youngest of us, being but thirty-eight years old when he died. More extensive obituaries will refer to his various monographical contributions to medical literature. In Vol. VI. of our Transactions there is a paper of his on the "Frequency of the Localization of Phthisis Pulmonalis in the Upper Lobes." As he was versatile, enthusiastic, and unselfish, his participation in the fight against misrule in New York was active indeed. It will always be gratefully remembered. He was deeply interested in the efforts of the New York Academy of Medicine to abolish the pollution of the Croton water shed, and to secure national control of quarantine.

As death is busy causing losses, it is our responsibility to see that the ranks of the Association remain closed. There being, however, but few vacancies in our roll of one hundred, but few candidates will be presented to you for election. You recollect that in last year's meeting you declined to increase our membership, which is now limited to one hundred. The same proposition will be made again, to be voted upon next year. The class of men anxious to join, and capable of doing scientific work, is certainly growing. Now it is true that the Association has been justly conservative, but conservatism is not narrow. As it was the pride of every one of us to be one of the hundred, it will, when we conclude to facilitate new admissions, be our pride and happiness to know that no increase of membership will ever include all the Americans willing and able to render actual scientific services to universal medicine.

ORIGINAL ARTICLES.

SOME PRACTICAL REASONS FOR EARLY OPERATION IN APPENDICITIS.[1]

By R. HARVEY REED, M.D.,
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In an an article on the surgical treatment of Chronic Catarrhal Appendicitis, read before the Ohio State Medical Society at its forty-sixth annual meeting, held at Sandusky in June, 1891, I referred to the practical uses of the vermiform appendix, and in closing, I drew the following conclusions, based on my limited experience at that time on the results of the surgical treatment of appendicitis: (1) That the appendix vermiformis is a useless rudiment. (2) That chronic catarrhal appendicitis is always dangerous, and liable to be followed at any time by hazardous and even fatal results. (3) That medical treatment is of little or no permanent value in this class of cases. (4) That the only safe and reliable method of treating chronic catarrhal appendicitis, and the only treatment that will promise permanent relief to your patient is prompt amputation of the appendix.

Since writing that paper, a great deal of literature has appeared, a great many theories have been advanced, and I am certain that the profession of to-day is much better versed in the diagnosis and treatment of diseases of the appendix than it was five years ago.

[1] Read before the Tri-State Medical Society, Chicago, Ill., April 8, 1896.

When it first began to dawn upon the profession that there was such a thing as appendicitis, and that peritonitis was usually a symptom rather than a disease, the differentiation between appendicitis and other diseases of the intestinal tract seemed to be the chief stumbling block. Medical men, more than now, objected to the knife and advocated the use of medicinal remedies, with hot applications combined with a large smattering of expectant treatment. It is true, not a few of their cases, then as now, got well, but while their expectant treatment was followed with success in a few cases, a large number terminated fatally, which doubtless could have been saved by an early operation. Very much to the discredit of the medical profession, appendicitis was taken up by the lay press, and became, to a certain extent, a fad. Medical men arrayed themselves against operations, while many of the surgeons favored them. These matters were discussed pro and con, until the average citizen was about as familiar with appendicitis as many members of the medical profession. Operators, however, disagreed in reference to operating; not a few advocated early operation; others advocated operating immediately regardless of the stage of the disease; others advocated waiting until pus formed, and still others advised never to operate in the first attack. With all this division of opinion among operators, saying nothing of those who did not pretend to operate, with the numerous deaths which followed, whether cases were operated on or not, is it any wonder that the laity became alarmed and confused.

I shall not enter into the discussion of the anatomy or pathology, or even the diagnosis of appendicitis, but shall proceed at once to the consideration of some practical reasons for early operation:

1. In discussing this subject I wish the gentlemen of this Association to bear in mind that the appendix vermiformis is a useless appendage that is simply a rudiment in man of what is a valuable portion of the intestinal tract in some of the lower animals.

2. I wish to put myself on record that even a healthy appendix is a dangerous portion of the intestinal tract, and liable at any time to make trouble for its possessor.

3. I wish you also to bear in mind that the simple removal of a healthy appendix is not a dangerous operation, and is not followed by unfavorable results, if properly performed.

In my experience it is delay that has increased my mortality record in these operations. In those

cases where consent was obtained for an early operation, I have been enabled, by the removal of the appendix, to save many lives; but when, for any reason, delay has occurred until perforation, suppuration, and septic infection have taken place, I have either lost the patient, or he has been obliged to lie for weeks and suffer from a multitude of complications, not the result of the operation, but plainly the result of delay. In this connection I wish to offer as evidence of the importance of an early operation the following case:

Samuel Wilson, age forty-one, weight 225; a merchant, resident of Columbus, O., was taken ill with pain in the right iliac region, July 1, 1894, at which time he called his family physician, Dr. J. U. Barnhill, who found him exceedingly tender over McBurney's point, with temperature 100°. His diagnosis was "suspected appendicitis." July 2d, his temperature had risen to 101°, and there was severe localized pain in the right inguinal region, with constipation. The next day his temperature was 101°; local tenderness more marked. Diagnosis of appendicitis was made, and he was advised to go to the hospital for operation. On the 4th his temperature remained 101°, pulse 98; pain intense, and distinct tenderness over the region of the appendix. On the 5th of July his temperature was found to be 102°, pulse 110, and pain less severe. At this time I was called in consultation, confirmed the diagnosis, and advised operation as soon as possible. On the 7th there was slight delirium; temperature 102½°, pulse 120. On the 8th his temperature suddenly rose from 102° in the morning to 104° in the afternoon; tenderness more marked, with decided evidence of an abscess. He was admitted to the Protestant Hospital and prepared for an operation the next day, July 9th.

Assisted by Drs. Barnhill and Means, I operated, opening a large abscess in the right inguinal region, which involved the appendix, as well as the head of the cecum. Not less than a quart of pus was evacuated. The parts were thoroughly flushed with 1–3000 bichlorid. We found that the appendix had sloughed off, and that circumscribed necrosis had taken place in the walls of the cecum about three inches above its head, causing an opening at least an inch in diameter, which allowed the fecal matter to discharge into the abscess cavity. This was all thoroughly washed out with peroxid of hydrogen, followed with bichlorid. The opening in the bowel was closed with a Lembert suture and the abscess cavity packed with iodoform gauze. The cavity was thoroughly cleansed from three to four times a day, but on the 11th of July, the second day after the operation, a fecal opening was discovered. The abscess cavity closed rapidly by granulation, leaving a fecal fistula.

On August 7th we made our first attempt to close this opening, through which the mucous membrane of the colon freely protruded. After having thoroughly cleansed it with antiseptics, we proceeded to denude the mucous membrane for at least an inch and a half in width, extending this process completely around the fistulous opening. The denuded surfaces were then carefully sutured to each other and the integument closed with silk sutures. This operation, however, proved to be a failure, and in a few days the sutures sloughed out and the patient was left in the same uncomfortable and undesirable condition.

A second attempt was made at closing this fistula on August 24th, at which time we made an incision completely around the fistulous opening, carrying our dissection just to the verge of cutting the peritoneum. We then inverted that portion of the bowel which protruded through the abdominal walls, bringing the surface of the outer coat of the intestine together, in the closing of which we used four rows of sutures. The wound was then washed out antiseptically and the integument closed with silkworm-gut. This held for several days, but eventually gave way, and another fistulous opening was the result. Various other operations, with a view of closing it, were resorted to, but all failed to accomplish the desired end.

Unfortunately, the patient, in spite of all we could do for him, continued to vomit from a week to ten days after each operation, thus putting extra tension on the sutures. This, I believe, to a large extent caused infection, and the re-establishment of the fistula. To avoid this we made two trials with cocain anesthesia, with better results, so far as emesis was concerned, and hence better results from the operation. After these operations the wound gradually closed up and the patient's general health was improved, and December 21, 1894, he was discharged from the hospital apparently well.

Soon after his discharge a slight amount of fecal matter made its appearance along the line of the fistulous track, which was now largely composed of cicatricial tissue. This, however, did not annoy the patient a great deal, and after having gone through such a serious ordeal as I have briefly described, he was willing to put up with some inconvenience, provided it did not increase. September 7, 1895, he became decidedly worse; a complete artificial anus formed, and for over a month he did not have a natural stool, the fecal matter all discharging from the opening in the bowel which was so large that my hand could readily be passed into the ascending colon, and the ileo-cecal valve distinctly felt below, together with the curve at the commencement of the transverse colon above. Water injected by a fountain syringe into the rectum would freely escape through the artificial anus without any pain or disturbance to the patient.

Mr. Wilson was again admitted to the Protestant Hospital September 15, 1895, at which time the protrusion of the bowel was about the size of

my two fists. After carefully studying his case, I decided that all the failures heretofore were due to fecal infection together with continued vomiting after the operation, and I then proceeded to devise a plan with a view of overcoming this obstacle. I finally decided to perform an ileo-cholostomy with the Senn bone plates, making the artificial opening into the ascending colon just below the curvature of the transverse colon, with a view of changing the course of the fecal current, and switching off the lower portion of the ileum together with the cecum up to the point at which the ileum was joined to the ascending colon.

This operation was performed October 17, 1895. Before operating the colon was cleansed as thoroughly as possible, the head of the cecum was packed with pellets of absorbent cotton, and the artificial anus covered completely with antiseptic gauze, so as to exclude, as far as possible, infection. The usual abdominal opening was made just below the curvature between the ascending and transverse colon. An opening about an inch and a half long was then made lengthwise of the colon, which admitted one of the Senn bone plates. Having fastened the plate to its proper place, the opening was carefully guarded with a sponge by an assistant, so as to prevent any fecal infection. I next brought up the cecal end of the ileum, and made an opening in that at a point to correspond with the opening already made in the colon, introduced the bone plate, and completed the operation *secundum artem*, including a running suture along the plates so as to doubly secure them.

The patient got along nicely after this operation without any difficulty worth mentioning. It was very interesting to pass the finger into the colon and watch the process of absorption take place in the bone plates, which on the sixth day came away, a mere film about the thickness of a piece of tissue paper.

The final operation for the closure of the artificial anus was made December 16, 1895. The patient was carefully prepared for this operation by a restricted diet for four or five days previous, during which time we allowed him to drink all the water he could possibly indulge in, for a dual purpose. First, to relieve the hunger due to the restricted diet and, second, to obviate thirst after the operation and prevent vomiting. The morning of the operation, the colon was cleansed by a thorough douching, and every arrangement made for an aseptic operation. Before commencing the operation, I was interested to know the size of the opening where the artificial union of the two intestines had been made, and consequently passed my hand up to the opening and found that I could pass both the index and middle fingers, without any effort on my part, or pain on the part of the patient. This convinced me that the opening between the two intestines was sufficiently large. I first packed the colon with small pellets of cotton, for the purpose of preventing fecal infection and to act as a guide after I had entered the abdominal cavity. I then brought the integumentary edge of the artificial anus, together with a continuous suture of catgut, in order to prevent any possible escape of fecal matter during the operation proper. Assisted by Drs. Means and Cole, I then proceeded to enter the abdominal cavity by making an incision parallel to the rectus muscle, the entire length of the artificial anus, along its inner margin. Having entered the peritoneal cavity, it was very easy to distinguish the ascending colon from the ileum on account of it having been filled with cotton. I could readily pass my finger down to the lower end of the ileum and locate the ileo-cecal valve below, while it was easy to locate the artificial attachment of the ileum to the colon above. Having positively determined my anatomical bearings, I then dissected completely around the artificial anus until I had freed it from its lumbar attachment, when I commenced to invert the entire mass, first with a row of kangaroo-tendon suture, between the catgut suture, above-mentioned, and the bowel, and continued until four rows of these sutures were inserted, and the bowel so completely inverted that there was a depression in the wound instead of a protrusion. You will observe we had made (including the continued suture) five rows of sutures, four of which were made of kangaroo-tendon. The wound was then thoroughly washed with sterilized water and closed with heavy silk suture, covered with iodoform gauze and sealed with iodoform collodion. From this time on the recovery of the patient was without interest. In a few days after the operation, the cotton with which we had packed the head of the cecum, passed per rectum, and shortly after that, natural stools were established. When discharged from the hospital, January 24, 1896, he was having two natural stools a day without any trouble. At this time he is in good health and weighs 218 pounds.

During the past winter I was called early in the morning to a case in which an acute attack of appendicitis had set in, the night before, in a young man about twenty years of age. My advice was an immediate operation; but for various reasons it was delayed. At four o'clock, the same afternoon, there was evidence of perforation of the appendix, with profound shock, followed by septic peritonitis, and for a time it seemed as though he would die from collapse. Having rallied sufficiently, he was admitted to the Protestant Hospital, but operative interference was still delayed until it was evident that nothing but an operation could possibly save his life. I operated under a protest in my own mind and found the abdominal cavity filled with pus, with numerous points of necrosis extending along the intestinal tract and a general septic condition, so marked that it was evident that death would ensue in a few hours, which it did.

Another case was admitted a few days later, in which there had been a question of diagnosis, and

from the incipiency of the attack until the operation, several days had elapsed. As soon as the diagnosis was satisfactory an operation was made, but septic infection had done its work. Numerous pockets of pus had formed, necrosis of a portion of the intestine had taken place, and again the patient was relieved from his suffering by the hand of death.

Gentlemen, these are serious matters for the surgeon, and when I come before you advocating early operation for appendicitis, I do it because I believe it is the only safe and reliable plan of treatment. I believe it offers, to the patient first and to the reputation of the surgeon second, more than any other line of treatment that has yet been tried. Why wait for a second attack? Why wait to see whether perforation will take place and pus form? It is true, perforation may not take place and pus may not form, or, if it does form, it may rupture into the head of the cecum and escape, and your patient get well; but is that an argument in favor of non-interference, when so many of our patients who wait for something to turn up will die! It is true that many of these cases will have recurrent attacks, some as high as half a dozen or more, and still live through each of them, but is that any argument why we should allow a patient to remain in a condition which endangers repeated attacks of sickness, any one of which may snatch him from time to eternity without a moment's warning?

Allow me to offer as testimony in favor of an early operation the case of a young gentleman who was just about to graduate in medicine, and who, at seven o'clock in the evening, was taken with pain in the right iliac region. Before nine o'clock next morning appendicitis was diagnosed. An immediate operation was made by my colleague, Dr. Baldwin, assisted by Dr. Means and myself. An inflamed appendix was found, just ready to burst and covered with wandering leucocytes, which only needed the presence of pus microbes to convert them into poisonous pus. The appendix contained several enteroliths, which were doubtless the cause of the inflammation, and which at any moment might have caused pressure necrosis, followed by perforation and septic infection. But what was the result? This young man got well without a bad symptom, and is now at his home enjoying life, in contradistinction to another professional gentleman, who, a few days later, in the city of Columbus, was taken with this treacherous disease, was operated by an eminent surgeon of our city three days later, and died of septic peritonitis on the seventh day following the attack.

Gentlemen, these are only a few of the many cases which we cannot ignore. We, as professional gentlemen, must respect the experience we earn in the field of practice. We must set aside theory and be governed by facts, and when we are called to the bedside of a case of appendicitis, ask ourselves the question, what course shall we pursue that will afford this patient the greatest protection?

Allow me to give just a few quotations from the the experience of others in the treatment of appendicitis. In an able article by Dr. Meyer of New York, on "When Shall we Operate for Appendicitis?"[1] he says:

"It is a great misfortune, I believe, for those who were stricken by appendicitis within late years that the 'early operation,' originally advised by Dr. McBurney, had to give place, by virtue of medical evolution, to the so-called 'timely operation.'

"Generally speaking, no doubt it is more scientific in the treatment of patients to individualize: thus also in appendicitis, it is more scientific not to find the indication for the removal of the appendix given as soon as the diagnosis of its inflammation has been made. And I for my part am convinced that the medical profession will continue to carefully weigh the pros and cons with reference to operation in each case of appendicitis. Yet at the same time I am firmly convinced that if we could give one hundred equally serious or equally light cases of appendicitis to two equally trained surgeons, the one who believes in and always does an early operation will save a greater percentage of lives than the other, who only takes the knife in hand during the attack when he considers it to be time."

In an exhaustive article, entitled, "Should the Appendix be Removed in Every Case of Appendicular Abcess?" by J. Wm. White, M.D. of Philadelphia,[2] he says:

"I believe, for exampie, that few, if any, would dissent from the following rules: Immediate operation is indicated whenever the onset of a case of appendicitis is marked by both suddenness and severity; whenever, during even a mild attack, the symptoms at the end of forty-eight hours are unrelieved or are growing worse; whenever in cases seen later a firm, slow-forming, well-defined mass is to be felt in the right iliac fossa: whenever at any time a sudden increase in the acutenesss of the pain and a rapid diffusion of tenderness occur; whenever there is good reason for believing the appendix infection to be tubercular in character; whenever attacks of any type have been numerous, or are increasing in either number or gravity, or have unfitted the patient for work or activity, or have caused local symptoms which are permanent and persistent, or have at any time put the patient's life in great danger."

I might continue to multiply the evidence in favor of early operation, but I do not deem it necessary, for I doubt whether there is a surgeon within the hearing of my voice who cannot corroborate, by cases that have come under his own observation, the statements I have made to-day. I have lived through the era when a case of perforated appendicitis was diagnosed peritonitis

[1] *Medical Record*, February 29, 1896.
[2] *University Medical Magazine*, March, 1896.

with a grave prognosis. I have watched the surgeon give relief to these cases by the use of the knife. I have seen the pendulum swing to a point where it was advised to operate on all cases; I have seen it return to the opposite extremity, in which some of the best surgeons have advocated delay, and during all this time I have had personal experience in each of the different methods advocated, but, after having tried them all I have returned to my former faith, and unless better evidence shall be furnished in the future than in the past I shall continue to advocate early operation in appendicitis.

CHANCRE OF THE TONSIL AND TONGUE, WITH REPORT OF FOUR CASES.

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LECTURER ON OPHTHALMOLOGY AND LARYNGOLOGY IN THE KENTUCKY SCHOOL OF MEDICINE, ETC., ETC.

BEFORE reporting the following cases I wish to say a few words in regard to the diagnosis of primary syphilis of the mouth and tonsils. Some recent experiences lead me to believe that the profession generally greatly overestimates its difficulty, and that many are inclined to take the throat surgeons' diagnosis of chancre of this region with a liberal allowance of salt, and to consider such diagnosis a little better than a bold guess. While chancres of this region differ in some respects from the cutaneous or muco-cutaneous genital chancre and lack some of its characteristics—still, they present to the careful observer an appearance, and clinical history sufficiently distinctive to warrant the diagnosis of primary syphilis, or at least a stay of proceedings until the appearance of additional evidence in the shape of secondary manifestations.

Taking into consideration the fact that all ulcerative lesions of the mucous membrane of the mouth and pharynx are almost certainly malignant, tubercular, or syphilitic, we find a diagnosis can be arrived at by exclusion. As far as the tonsil itself is concerned we may go still farther and say that an ulceration beginning in the tonsil means either carcinoma or syphilis. Carcinoma will be excluded by the fact that the pain, the enlargement of the tonsil and the glandular involvement, all precede the ulcerative process by two or three months. Then again the ulceration of carcinoma is, in itself, characteristic in that the ulcerated area is elevated and its edges overhang the surrounding mucous membrane, and is surrounded by a bright red areola.

The greatest difficulty in the diagnosis of chancre of this region lies in its differentiation from the ulcerations of the secondary and tertiary stages of syphilis. Chancres of the tonsil present the ordinary characteristics of primary lesions in general except that they involve a larger surface, and that the induration, as a rule, is not so well marked. The ulcers are sluggish and covered with a grayish-white exudate. They are of varying depths and have sloping edges. The involvement of the cervical and submaxillary glands is marked, constant, and characteristic. This unilateral grandular enlargement I consider the most important and distinctive point in the differential diagnosis.

The superficial ulcerations of secondary syphilis are excluded by the fact that they are always bilateral and more or less symmetrical—the glandular involvement is slight and, of course, also bilateral.

The tertiary lesions may be single or multiple. The ulcer is crater-like, deeply excavated with shelving edges; the glands are but little, if at all enlarged, and are not sensitive to pressure. By a little tact and skill in questioning and examining the patient, enough evidence can usually be obtained to either exclude or establish the history of infection by the genital route.

Some months ago I made the following report to the Louisville Clinical Society.[1]

CASE I.—On February 14th, Dr. A. said he had experienced some pain on swallowing, and had a slight elevation of temperature for the past three weeks. On examination I found the left tonsil considerably enlarged. A little anterior to the center of the tonsil was a deep, oval-shaped ulcer, about three-quarters of an inch in length, the long diameter being from above downward; the anterior margin of the ulcer involved that part of the tonsil covered by the anterior pillar of the fauces. The free margin of this anterior pillar was also involved in the ulcerative process. This ulcerated margin was from one-half to three-quarters of an inch in length; the ulcer, both on the tonsil and the anterior pillar of the fauces, was covered by a grayish-white membrane or exudate. The entire soft palate and uvula were very much congested, but not edematous. The deep, cervical glands were much enlarged, producing quite a perceptible external deformity.

The patient was a robust man of thirty-two years. I was satisfied that the ulceration was syphilitic, and from the general appearance of the throat, the clean-cut appearance of the anterior pillar, the ulceration of the tonsil, the absence of edema of the palate and uvula, the marked enlargement of the cervical glands, I felt almost sure the lesion was primary. I requested him to remove his clothing, when I found that over his

[1] *Journal Cutaneous and Genito-urinary Diseases*, October, 1895.

chest and back his body was the seat of a papular eruption—the typical and unmistakable papular syphilide. The diagnosis was a complete surprise to the patient, who, by the way, is a married man. He could think of no possible exposure, and said that, so far as he knew, he had not a single syphilitic among his clientele, which is composed almost wholly of a rural population. I think his statement is correct as far as he knew, as he is an honorable gentleman.

On my advice, he sought the opinion of a number of throat specialists, as well as the genito-urinary surgeons. At his next visit he told me they had all concurred in my diagnosis, and he accordingly began with antisyphilitic treatment.

I wish to supplement this report by adding two cases of chancre of the tonsil and one of the tongue.

Case II.—On September 4th, J. H., aged twenty-five, came into my clinic at the Kentucky School of Medicine, stating that he had a sore mouth. On examination, I found three or four abrasions of the lips and mouth that looked like the superficial ulceration of the second stage of syphilis. The young man denied having any sore about his genital, and a careful examination showed the truth of his assertion. Making a careful examination of the throat, I found a deep, circular ulcer of right tonsil. The ulcer was situated at the extreme upper part of the tonsil, and almost hidden by the anterior pillar of the palate, and was covered with a grayish-white deposit. The induration could be easily made out by palpation. The cervical glands were greatly enlarged on the right side, and exceedingly painful. He said the glands had been enlarged for three or four weeks. The man was living with a prostitute, who was under treatment at the same clinic for mucous patches of throat and mouth. The diagnosis of chancre of the tonsil was made at the first examination. The patient left the clinic and passed into the hands of a physician in private practice, from whom I learn that he developed a typical secondary eruption, leaving no doubt as to the diagnosis.

Case III.—On December 10, 1895, I saw in consultation, Mrs. S., aged sixty-three. She had an ulcer on the right tonsil of six weeks' duration. The ulcer was about the size of a dime, slightly excavated, rather irregular in its outline, and covered with a grayish deposit. She complained of pain on deglutition and pain in the right ear. The tonsil was pushed well out toward the median line, and was considerably larger than we would expect in a person of this age; the hypertrophy was more apparent than real, from the fact that it was forced out of its bed and pushed into the fauces by the enlarged cervical glands. The swelling of these glands was sufficient to produce quite a perceptible external deformity, and was painful and sensitive. The diagnosis of chancre of the tonsil was made, and the patient put upon palliatives and placebos to await developments. The ulceration afterward extended to the anterior pillar of the palate and was exceedingly obstinate and tedious; its healing was not complete until the end of the fourth week. Two weeks after the healing of the ulcer of the tonsil, and twelve weeks from the time of its inception, the belated secondary manifestation made its appearance in the palms of the hands, then on the neck and face, and later she developed the typical secondary lesions of the mouth and throat.

Case IV.—A lawyer, aged thirty years, was referred to me by a dermatologist for an opinion in regard to a throat affection. On examination, I found the apex of each tonsil covered by a pseudo-membranous mucous patch, the lesions being symmetrical. He said three months prior to the time he came to consult me he noticed a small ulcer on the end of his tongue on the dorsal surface of the tip a little to the left of median line. It was rather painful, but the principal inconvenience was from a feeling of soreness or stiffness of the muscles at the root of the tongue and left side of the neck. As the ulcer persisted for five or six weeks, he became uneasy, lest the trouble might be specific or malignant, and went to a neighboring city for medical advice. He was seen by three different physicians, all of whom assured him it was not specific, but was probably due to some hepatic or alimentary disorder. They prescribed Carlsbad water for the correction of his supposed disorder, and he returned to his home. At the time of my examination, the ulcer of the tongue had completely healed, and its site was marked by a smooth glistening spot, entirely devoid of papillæ. With the exception of some suspicious-looking spots on the palmar surface of the hands, the lesion of the tonsil was the only manifestation of secondary syphilis. But these were sufficiently characteristic to warrant the diagnosis of syphilis. A few days later, several syphilides made their appearance on the face and neck. He also developed mucous patches around the anus

Chancres of the tongue are less common than of the tonsils, as shown by the following statistics:

Bulkley, in his recent work, "Syphilis in the Innocent," in discussing the location of the primary lesion, says that extra-genital chancres "form possibly ten per cent. of the whole."

The same author has tabulated the location of 9058 recorded cases of extra-genital chancres; of these there occurred on the lips, 1810; on the breast and nipple, 1148; buccal cavity, 734; fingers and hand, 462; eyelids and conjunctiva, 372; tonsils, 307; throat, 264; tongue, 157; chin, 146; cheek, 145; trunk, 100; nose, 95; arms, 87; peri-genital, 77; legs and thigh, 73; forearm, 59; neck, 47; gums, 42; forehead and temples, 37; ears, 27; vaccination, 1863; cupping and pleb-

otomy, 745; circumcision, 179; tattooing, 82. It will be seen from this table that three and a half per cent. of all extra-genital chancres occur on the tonsil.

Then we must take into consideration the probability that a large proportion of the 734 recorded as occurring in the buccal cavity, and the 264 in the throat were, in fact, chancres of the tonsil.

I think it probable that next to the lips the tonsil is the most frequent seat of extra-genital chancre, and that possibly ten per cent. of all extra-genital chancres are tonsillar. The mucous membrane of the palate and faucial pillars, presenting as it does a smooth, dense tissue, covered with squamous epithelium, offers little chance of infection. Hence it is not unreasonable to suppose that the syphilitic virus passes over this part of the alimentary tract, and finds in the open crypts of the tonsils a field most admirably fitted for its protection and growth. In most instances the infection takes place in a tonsil already hypertrophied, which seems to afford a favorable condition for the development of the disease. The early development of the secondary eruption appears to be rather characteristic of the tonsillar chancre. This is probably due to the large size of the initial sore and to the fact that the tonsil is so intimately connected with the lymphatic system, the eruption making its appearance in from two to four weeks. In my last case the eruption was delayed until the twelfth week. The eruption is, in most cases, papular in character, still further confirming the rapid absorption, as the appearance of the papular syphilide is usually delayed until the the third or fourth month.

The earlier writers on diseases of the throat dismiss the subject of the method of infection with the bare statement that "chancres of the tonsil are due to bestial practices"—a statement that later investigation has shown to be incorrect and unjust. While it is unfortunately true that a small proportion are undoubtedly contracted in this way, by far the larger proportion are traceable to other causes, and most of them have been innocently acquired. Among the many causes alleged in the cases reported may be mentioned kissing, pipes, cigars, glass-blowers instruments, musical instruments, drinking vessels, forks, spoons, feeding bottles, of which transmission by kissing seems to be the most frequent. In only one of my four cases was it possible to trace the source of infection. In looking up the question of extra-genital chancre I have been more than ever impressed with the great injustice done the profession, as well as the public, by the common custom of teachers and text-books considering syphilis as exclusively and essentially a venereal disease, forgetting or ignoring the fact that it is a contagious disease due to the entrance of a specific virus into the system; that it is venereal only in the sense that illicit sexual relations afford the most favorable conditions as well as the most frequent opportunity for its propagation. This undue attention to the venereal aspect of the disease, or, more properly speaking, the want of attention to its non-venereal aspect, has done untold harm by causing many an unfortunate but entirely innocent patient to feel himself degraded and disgraced, knowing as he does that the occurrence of syphilis is almost invariably associated with some loathsome sexual disorders, both by the the laity and the medical profession, To add to his humiliation, he knows that his statements in regard to the trouble to his family, intimate friends, and even his physician, are at best taken with a large degree of allowance. The failure on the part of the physician to appreciate the fact that syphilis may be transmitted by many other means than by improper sexual relations causes many cases to go unrecognized, as in the one reported, which had been seen by two physicians prior to the time the patient came to this city, neither of whom seem to have suspected the cause of the trouble. A similar lesion on the genitals, with the enlarged glands in the groin instead of neck, would doubtless have been diagnosticated by either of them without hesitation.

CLINICAL LECTURE.

OSTEO-SARCOMA OF SCAPULA, FRACTURED CLAVICLE, DOUBLE HARE-LIP.[1]

By ROSWELL PARK, A.M., M.D;
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Case I.—This first patient is one on whom you saw me operate ten days ago, removing the left scapula on account of an osteo-sarcoma. You can see plainly the T-shaped scar of operation, which has, however, healed by first intention without suppuration. I will pick out the silkworm-gut sutures that were inserted to hold the deeper tissues in apposition; the superficial catgut sutures are already absorbed, except a few ends that project from the skin and that may be dislodged without trouble. Nothing further in the way of a formal dressing will be required. The patient can already move the arm quite freely, though extension of the humerus is not yet possible. With further restoration of the muscles, and with practice, he will gain a better control over the extremity

[1] Delivered at Buffalo Hospital.

so that the loss of the shoulder blade will not cripple him so much as might be expected.

Case II.—This boy has a broken clavicle, which was set at the Fitch Hospital a week ago. He came here several days later. The result is a good one, there being a very little overlapping of the fragments. There is a projecting subcutaneous spicule of bone that has alarmed the patient somewhat, but we have reassured him that it will be absorbed in the process of repair. I am particularly glad to have the opportunity to show you this case at the present time, as it was only yesterday that I described the proper treatment of such fractures to the senior class, in the didactic course. The indication in fractures of the clavicle is to pull the shoulder upward, outward and backward. If the backward pull is sufficient, the curved surface of the thoracic wall will inevitably direct the shoulder outward. I have described to you a mild method of treatment, which, nevertheless, suffices for some cases, and which consists in keeping the patient flat on the back, with a pillow between the shoulders, so that the weight of the arm and shoulder tends to overcome any over-riding of the fragments of the bone. The present case has been dressed with the posterior figure-of-eight bandage. Measuring with my eye, the distance from the spine to each acromion, I can distinguish no difference on the two sides, hence the overlapping must be slight indeed.

I want to show you to-day the Moore dressing, which takes advantage of the peculiar decussation of the fibers of the pectoralis major, those arising highest on the clavicle passing to the lowest point on the humerus, and *vice versa*. The principal deformity that we have to anticipate in fractures of the clavicle is the pulling upward of the inner fragment by the contraction of the sterno-cleido-mastoid. Now, by pulling backward and outward on the humerus, the pectoralis major is put on the stretch and the action of the sterno-cleido-mastoid is opposed and the deformity prevented. It is not enough, when there is a tendency to upward displacement, to put the humerus comfortably at the side of the chest. A decided backward and outward pull is necessary to counteract the muscular action from above, and if we also raise the outer fragment of the clavicle by raising the shoulder and holding it in this elevated position, all the indications are met. Dr. Moore's double figure-of-eight dressing can be extemporized from a sheet, or shawl, or even a blanket, so that it is practically always at hand, however far away you may be from ordinary medical and surgical supplies. The bandage should be about six or eight inches broad, or a little narrower for a young person, and at least two yards long. I first apply the middle of the bandage under the elbow, then take a turn with each half around the humerus, the posterior part in front, the anterior part behind it, while, if necessary, an assistant holds the arm in the position of upward, outward, and backward strain which I have described. Even so much of the dressing exerts a beneficial action in diminishing deformity. You will notice that I carefully avoid passing the bandage over the site of fracture, as the pressure between the cloth and the jagged ends of bone might, very easily cause ulceration. In order to hold the shoulder in position, a second turn is necessary about the neck or opposite shoulder. If I pass the bandage around the neck, I not only fail to draw the shoulder backward, but the patient is rendered uncomfortable by the choking. Hence the bandage should be passed behind the neck and around the opposite shoulder, as originally pointed out by Dr. Moore. Simply to add to the patient's comfort, a pad of cotton should be placed in the opposite axilla. As a matter of illustration I have rather overdone the stretching of the bandage, and I will relax it a little before fastening it in the back. Still, it must be remembered that any dressing will stretch a little so that it should be put on a little tighter than you mean to leave it finally. Flannel is not a suitable material for such a dressing as it is so elastic that it always yields after it has been on a few hours. Again, it is better to use old cotton cloth, or at least that which has been washed and ironed, than the unbleached cotton as it comes from the factory. Few persons realize how much new cotton will yield. The tricksters on the stage, who allow themselves to be bound with strips of cloth, appreciate the difference and manage to extricate themselves from bonds that seem absolutely secure, simply by using new cloth that will stretch. Following the turns of the bandage you will see that it is not strictly a double figure of eight, but three half-loops of the figure, a figure-of-eight and a half. The dressing needs to be supplemented by a sling for the hand and forearm, and perhaps, by passing a broad roller bandage around the trunk, so as to hold the arm in position of absolute quiet. This second roller does not include the arm, but passes through the loop between the elbow and the ascending spica turn. I hear somebody thinking if he is not actually asking whether this is a comfortable dressing? I cannot say that it is; but in fact I know of no fracture dressing that is thoroughly comfortable. I will reapply the dressing on the opposite arm, so that those of you on the other side of the amphitheater may see exactly how it is done.

In some cases of fractured clavicle, where there is little or no tendency to displacement, it is enough simply to hold the arm quiet. We may make, for example, a triangular sling supporting the forearm, hand, and elbow, with the ends tied behind the shoulders. This dressing, which is a modification of the Mayor scarf, will suffice in a small proportion of cases. In my own work, I use either the Moore dressing or Sayre's adhesive strips which fulfill the same indications. Simply on account of the inconvenience of removing the plaster, I will illustrate the adhesive strip dressing by applying pieces of roller bandage. The strips are about three inches wide and a yard long. The first one is passed around the upper end of the humerus, and is then pulled backward and toward the opposite side of the body, and is pressed against the back and side, where it adheres. The forearm is now flexed and a strip is run along the forearm, turning upward at the elbow, following the line of the humerus, and then crossing the back to the sound shoulder, and thence again down the hand and forearm, the two ends overlapping. This dressing, like the Moore's, or any other, may be applied so as to be utterly worthless, or it may be made

snug so as to hold the parts in the proper position. When the second strip is applied the shoulder must be elevated as far as possible.

While we are waiting for the next patient to be anesthetized, I wish to show you the dressing for fracture of the jaw. A broad bandage, about four inches wide and two feet long, is slit up the middle from each end nearly to the center, so as to make a chin support with four tails. To make a solid support for the chin, a piece of sole leather may be soaked and rendered pliable, then fitted accurately to the normal contour of the chin. But I prefer to take a little canton flannel or lint, sop it in a cream of plaster-of-Paris, and mold a splint which will set in a few moments to any shape desired. This is padded and bound to the chin by the four-tailed bandage, whose lower tails are brought up and tied over the vertex, while the upper ones are brought around the neck below the occiput. While this is the essential dressing I like to reenforce it and provide against its slipping, by applying a starch bandage over all.

CASE III.—I have shown you this winter several cases of hare-lip, including one or two in which there was not only a complete defect of the lip, but a failure of development of bone. To-day I show you a baby in which the intermaxillary bone, meeting with no opposition to its growth, has developed extensively, throwing forward the middle portion of the lip, which the Germans call the philtrum, and producing the appearance of a snout. Six or seven children of the same parents have shown no deformity. The child is brought in, not only with complete permission for the use of surgical measures, but with the plain expression of the desire—though not so crudely worded—that the baby be sent home either cured of this terrible disfigurement or in a box. This probosis must be forced backward to the level with the other parts of the lip, and then the defect on each side of the intermaxillary portion must be closed. The child is only four months old and is unable to withstand any protracted operation or severe hemorrhage. I shall, therefore, perform the operation in two sittings, contenting myself to-day with restoring the philtrum to its normal level. The first general indication for operation is plainly to remove a V-shaped piece of the septum and allow this restoration to take place, thus reducing the anterior deformity. I must be careful, however, not to sacrifice the intermaxillary portion of the alveolar arch, since it contains the rudiments of at least two incisor teeth, and their loss would be a serious matter. Neither do I wish to sacrifice the philtrum, or the middle of the lip, to which the lateral portions of the lip are to be hereafter fitted. I shall, therefore, remove part of the septum, well back from the lip, and the intermaxillary projection. On account of the vascularity of the parts, it is necessary to sponge freely and to quickly check the bleeding from the divided septum. Now, after taking out this V-shaped piece of bone, I can press the proboscis back where I want it. The nose will be somewhat flat, but in relieving such deformities as these, it is no part of the contract to fit a person for a "beauty show." I will apply the Pacquelin cautery, both to check hemorrhage and to guard against infection, for the mouth cannot be kept thoroughly aseptic and the charred surface will be less liable to absorb toxic matters than the fresh bleeding wound. After the child leaves the table, one of the nurses will hold a sponge firmly against the roof of the mouth, at the site of the operation, for half an hour or more, so as to prevent any oozing. Three or four times a day, the nose and mouth will be sprayed with a hydrogen peroxid solution. After ten days or two weeks it is probable that we can get union of all three parts of the lip by the usual method of suture.

MEDICAL PROGRESS.

Active and Passive Immunity to Cholera, Typhoid Fever, and Allied Diseases.—As a result of investigations covering a period of a year and a half, conducted in conjunction with Durham of London, GRUBER of Vienna (*Münchener medicinische Wochenschrift*, 1896, No. 9, p. 206) has found that a high degree of long-continuing immunity may be conferred upon guinea-pigs by the intraperitoneal injection of cultures of cholera bacilli, of typhoid bacilli, and of the bacilli coli communes rendered innocuous by chloroform, or by being heated to 140°. The immunity thus conferred relates to infection and not intoxication. The destruction of the bacteria in actively immunized animals, as well as in those protected by means of the serum of immune animals, is attributable to the activity of the bodily fluids, the polynuclear phagocytes playing only a secondary rôle. The blood and fluids of immune animals contain anti-bodies, which act within the bodies of actively and passively immune persons in the same way as they act outside. In passively immune persons no reactive transformation of the anti-bodies takes place. These anti-bodies have nothing directly to do with the destruction of the bacteria, which takes place as a result of the action of the alexins always present in the bodily fluids. The essential action of the anti-bodies consists in causing the bodies of the bacteria to undergo swelling, as manifested by stickiness. For this reason the anti-bodies may be designated glabrificins. As a result of the swelling of the bacteria the alexins can gain entrance to their bodies, and thus cause their destruction. In this process the glabrificins are used up, so that the effect depends upon the amount of immunizing fluid used. Active and passive immunity are essentially alike, depending upon the presence of glabrificins in the bodily fluids. Glabrificins have been found in animals thirteen months after the last immunization. Each bacterium has its own specific glabrificin, although the action of this is not absolutely but only relatively specific. The glabrificins are certainly derivatives of the body of the bacteria, but are only produced by transformation in the body of an immunized animal, probably through the action of the macrophages.

Successful Ligature of a Non-Traumatic Aneurism of the Vertebral Artery.—HUFSCHMID (*Archiv für klinische Chirurgie*, 1896, B. lii, H. 1, p. 23) has reported the case of a man, fifty-eight years old, without a history of syphilis, who, while at stool, with the head resting in the hands and the elbows upon the thighs, suffered rather vio-

lent flexion of the head upon the neck by the slipping of the left elbow. He at once felt a lancinating pain in the left side of the neck, and at the end of a week noticed in the same situation a swelling about the size of a hazelnut, quite free from pain. Without inflammatory manifestations the swelling increased to the size of a hen's egg in the course of four weeks. There existed, beside, general arterio-sclerosis. From the time of the accident there had been difficulty in swallowing, and at first also frequent nausea. The tumor, which was included between the junction of the lower and middle thirds of the left sterno-cleido-mastoid muscle—by which it was covered—and the angle of the jaw, was distinctly pulsatile and compressible. Its surface was smooth and pressure induced nausea. Over the tumor crossed a vessel of the size of the carotid, compression of which obliterated the temporal pulse. Compression of the common carotid lower down controlled the pulsation in the larger vessel overlying the tumor, but not that of the latter itself. In the further progress of the case it was observed that the left pupil was smaller than the right, and that the former did not react to light and in accommodation as well as the latter; but no noteworthy differences in the ophthalmoscopic conditions of the two eyes could be made out. The knee-jerks were enfeebled, but there were no other signs of locomotor ataxia. A diagnosis of aneurism of the vertebral artery was made, and operative relief undertaken. An incision, not quite three inches long, was made from the level of the larynx, at first along the posterior margin of the sterno-mastoid muscle and thence at a distance of a finger's breadth, to the supraclavicular fossa. To freely expose the lower pole of the aneurism and the beginning of the vertebral artery the clavicular portion of the sterno-mastoid was divided a little more than an inch above the clavicle. A ligature was applied on either side of the aneurism, the divided sterno-mastoid united with catgut, and the wound, except at its lower angle,—where a strip of iodoform gauze protruded,—closed with silver and silk. After the lapse of more than a year the tumor was replaced by a small, hard mass, free from pulsation, which occasioned no trouble. The left pupil was smaller than the right. Soon afterward the patient died suddenly in an apoplectic attack, but no autopsy could be secured.

Sterilization of Catgut.—KOFÉND (*Wiener klinische Wochenschrift*, 1896, No. 11, p. 188) details the method of sterilizing catgut employed in Gussenbauer's Clinic at Vienna. The crude strands are scrubbed with the aid of green soap and placed, for the removal of the fat, in ether, which is renewed until the fluid remains clear. They are then washed in absolute alcohol until all air-bubbles and all water have disappeared. Next the rolls, placed between layers of gauze, are exposed for two or three hours in a hot-air sterilizer at a temperature between 130° and 140° C. They are now immersed for a day or two in a one-tenth per cent. aqueous solution of mercuric chlorid, and finally preserved in a 1–1000 solution of mercuric chlorid containing 50 parts of glycerin.

Sudden Death from Occlusion of the Coronary Arteries.—OESTREICH (*Deutsche medicinische Wochenschrift*, 1896, No. 10, p. 148) has reported the case of a military officer, thirty-two years old, who, without previous illness, was seized on arising from bed on the day following his wedding with unconsciousness, speedily followed by intense cyanosis and death. There was no history of rheumatism, syphilis, alcoholic excess, chronic nicotin poisoning, or other possible cause of heart disease. Upon *post-mortem* examination the myocardium was friable and presented fragmentation of its muscular fibers. Just above the right aortic valve was a thrombus, about the size of a cherry-pit, attached by a delicate pedicle to the wall of the aorta, and which was so situated as to cover the orifice of the right coronary artery. This vessel was partially filled with liquid blood; its walls were thin and delicate, in places marked by yellowish spots, but free from calcareous deposits. The left coronary artery also was occluded by a thrombus about one-third of an inch long; beyond, it contained a small amount of liquid blood; its walls were thin and presented isolated yellowish spots.

THERAPEUTIC NOTES.

In the Treatment of Hemoptysis, SCARPA (*Semaine Médicale*, 1896, No. 12) recommends the administration thrice daily of from twenty to fifty drops of a combination of equal parts of fluid extract and tincture of hydrastis canadensis. One may begin with the smaller dose and, should it fail to control the bleeding, increase by ten drops at a time to the larger. The determined dose is continued for several days after the cessation of the hemorrhage. When the hemorrhage is associated with, and aggravated by obstinate cough, from gr. ⅓ to gr. ½ of codein, or from gr. ⅙ to gr. ⅓ of morphin hydrochlorate, may be added to each dose. It is always essential that both preparations be perfectly fresh.

The Treatment of Multiple Papillomata of the Larynx.—As the result of an extended experience, NAVRATIL (*Berliner klinische Wochenschrift*, 1896, No. 10, p. 202) pursues the following plan in the treatment of multiple papillomata of the larynx: In all instances, intra-laryngeal removal is to be practised if possible. In children, when symptoms of laryngeal stenosis becomes urgent, prompt tracheotomy is performed, followed by intra-laryngeal curetting of the affected areas; in case of recurrence, the curetting is repeated, but through the opening in the trachea, until there is no further return. In the case of adults, if intra-laryngeal measures have proved unsuccessful, laryngo-fissure is practised, and all of the new formation carefully removed.

For Epilepsy.—

Take of

Antipyrin,	1 dram.
Ammonium bromid	3½ drams.
Strontium bromid,	1 dram.
Solution of potassium arsenite,	40 minims.
Extract of solanum carolinense	10½ drams.
Water, to make	6 fl. ounces.

Mix.

Dose: A dessertspoonful or more twice daily.

—*Gaz. hebd. de Méd. et de Chir.*, 1896, No. 19.

The Medical News.

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OF MEDICAL SCIENCE.

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SATURDAY, MAY 9, 1896.

THE ASSOCIATION OF AMERICAN PHYSICIANS—OUR PROFESSIONAL "IMMORTALS."

There are few more interesting and industrious bodies meeting in this "association month" than that which has just adjourned at Washington. It was composed solely of those who have proved their devotion to scientific medicine, gathered from every part of the land, and presided over by one of the most impressive and inspiring figures in American medicine. The proceedings were marked by a dignified simplicity, an intellectual directness and vigor, and an utter absence of parliamentary or personal tactics of any sort, such as conspired to make the beholder proud of his profession. The session was a most intructive one to the profession at large, not so much from the intrinsic interest and importance of the subjects discussed, for the program was at first sight a distinctly disappointing one, but from the facts developed during their consideration and the point of view from which they were almost unconsciously approached.

In the first place the general drift of its work distinctly indicated that the study of the bacteria alone, as the sole or even chief factor in disease, has reached its high-water mark, if indeed the tide has not already begun to ebb. Although nearly half the program was occupied by papers upon bacteriologic studies, in only two of these was the germ itself made the chief point of interest, and its discovery—and naming—a sufficient excuse for the communications. In all the other papers the central and controlling ideas distinctly and overwhelmingly related to the resistance of the tissues to attack, the effect of soil upon virulence, the possibility of modification of even specific forms by environment, as was especially illustrated in the most valuable papers of Drs. Flexner, Bolton, and Theobald Smith, reported in another column.

The advance in medicine, which we owe to this enthusiastic study of the bacteria for their own sake, is of simply incalculable extent and value, and the resultant discoveries will always remain a monument and a model of thoroughness, conscientiousness, and devotion in research, forming one of our highest claims to the proud title of "scientific" medicine. Doubtless the great bulk of the profession will hail with cordial satisfaction the prospect that the brilliant and tireless powers of our laboratory-workers are beginning to be turned toward the physiological aspects and factors of the great problem of disease. To speak figuratively, the bacteriologic foot of bacterio-pathology has made a long stride forward, and the time has come for its physiologic fellow-foot to follow.

Much still remains to be done from the purely bacterial standpoint; in spite of the magnificent feats already suggested by the names, Metchnikoff, Hankin, and Cattani, we cannot but feel that we are barely upon the threshold of the great problems of immunity, of susceptility, of resistance. It is not improbable that we shall find that the fixed and floating cells of our bodies are to the fiercest bacilli as a Greek phalanx to a horde of Parthians, and that our tissues normally secrete antitoxins, which are as deadly to hostile bacteria as the proteid of the rattlesnake and the morphin of the poppy are to the enemies of their species.

GENITO-URINARY DISEASES. — RECENT ADVANCE IN THE KNOWLEDGE OF BACTERIURIA.

Within the past ten years, so much has been added to our knowledge of the etiological relation of micro-organisms to various conditions of the urine, to inflammations of the genito-urinary tract, and as causative factors in urinary infection or poisoning, that it may be said that a new epoch has been inaugurated. A vast number of contributions have appeared, many of which are valuable, many only suggestive, others being simply cumulative evidence, while some possess only an ephemeral interest. Such, however, is the importance of this accumulated mass of knowledge that its critical analysis and succinct portrayal will be of benefit to the physician, as well as to the gynecologist and surgeon.

There is a very prevalent opinion that the urine of individuals not suffering from any disease or presenting any symptoms is always free from microbic admixture when in the bladder. It is now well known that this fluid may, in passing through the urethra, carry with it some or many of the microbes which are the constant, and usually harmless, denizens of that canal. Recent observations, however, show very clearly that the urine, when still in the bladder, may contain many micro-organisms, some of which, under (to them) favorable circumstances, may become pathogenic, and produce more or less severe illness. The published cases of bacteriuria, as it is termed, are as yet not numerous, and their teaching will not admit of succinct didactic description, nor warrant any systematic deductions or generalizations, but they are very suggestive, and open up a line of investigation which, with further critical study, will throw much light on many ephemeral and severe morbid states, the origin of which now, very frequently, escapes recognition, even by intelligent and painstaking physicians. The most important article on this subject is that of Krogius (*Sur la Bacteriurie, Annales des Organ. Gén.-Urin.*, March, 1894), which is based on the study of eight cases, in which the urine was examined microscopically, and from specimens aseptically obtained cultures were made. A study of these cases, of which three were men and five were women, shows that the ages of the patients varied between twenty-eight and sixty-four years, and that in the men there had been antecedent urethral trouble, which had been presumably cured, and had not been followed by any functional or organic affection of the urethra or bladder. In the histories of the females, it was found that some had had antecedent pelvic affections, and had been operated upon; others had borne children, while others still had been catheterized. In some of these cases, without known exciting cause, and without any bladder symptoms, the urine, which always was acid, became fetid, more or less opaque, and loaded with bacteria. In one case only there was moderately increased frequency of micturition. A noticeable feature in some of the cases was a condition of ill-health, of which the chief symptoms were attacks of chills and fever and emaciation. In the case of one man, the health was in no way impaired. It is significant that in the urine of all of these cases the bacterium coli commune was found in large quantities by culture, and that local treatment by nitrate of silver instillations caused the micro-organism to disappear, and that then the general condition of the patient either improved or became normal.

The cases of Krogius are important by reason of the careful bacteriological studies which were expended on them, while the observations and cases of Roberts, Ross, Doyen, Enriquez, Schottelius, Reinhold, and Stenbeck, who have written on this subject, do not carry with them much scientific weight, being useful and, in a measure, suggestive as preliminary communications concerning an, as yet, little understood pathological condition. Krogius remarks of his cases that they are not ordinary instances of urinary infection, and that they present entirely different features from those observed in cystitis. There is one point concerning these cases not brought out by Krogius, which has struck me forcibly, and that is that in some of them there had been antecedent lesions of the urethra, which seemed to have gotten well. Now, in these cases the urine in the bladder later on contained the bacterium coli commune, and the following questions suggest themselves: Did these micro-organisms lurk in the then presumably healthy urethra or bladder after the cessation of the inflammation?

or, was a morbid focus left, in which they remained in a latent and inoffensive state? In some cases the suspicion is warranted that the microbes were carried into the bladder in the act of catheterization. As to the local symptomatology of bacteriuria, most of the cases thus far observed show that there is no evidence of bladder trouble, and the opacity of the urine and its bad odor were in several the only disquieting features. In two cases, there was evidence of mild vesiclar irritation. Severe systemic reaction was only observed in a few cases, and was entirely absent in the majority, and it promptly ceased when local medication was instituted. It is remarkable to observe how, in some cases, the bacterium coli commune was found in the urine in enormous quantities, and yet there was no disarrangement of the health, while in a few there was evidence of what we may suppose was more or less severe urinary poisoning. It is impossible in these cases to say why cystitis was not produced by the virulent microbe so constantly found. This immunity was probably due to the integrity of the bladder tissues. It is to be noted that in five cases bacteriuria became more pronounced when the urine became mildly albuminous, and the question suggests itself, was the fluid then more favorable to microbic growth than it had been before? The occurrence of systemic symptoms during the existence of bacteriuria is at present difficult of explanation, and the question presents itself, can these microbes or their toxines pass through mucous membranes in appearance healthy? This is still another question for the future to decide.

In two cases (Krogius and Stenbeck), at the autopsy the bladder tissues to the eye seemed normal. It will require microscopical study to establish the anatomo-pathological conditions of bacteriuria.

Bacterial urine has a cloudy, even an opaque, appearance, and if it is shaken up, an undulatory or eddying motion may be seen, as if it contained some impalpable powder. Its odor is described as stale, and it may be so penetrating that it pervades the whole room.

The cases thus far considered may be classed under the provisional title of essential bacteriuria. In addition, it is well to remember that in the course of all acute, and perhaps chronic, infectious diseases, there may be a secondary bacteriuria. Then, again, we may recall to mind the fact that Ultzmann, who was one of the first to write on this subject, states that he has found bacteria in the urine of persons who live in marshy, malarial, and unhealthy regions, in those living in a bad atmosphere, and who stay for long hours in dissecting rooms and morgues. Perhaps in these cases the microbes are eliminated through the kidneys, and, as a result, the system is spared. The foregoing considerations show very clearly that we are not yet even on the threshold of the knowledge of bacteriuria, and that much and many-sided study and observation and many years will be required before the subject can be said to stand upon a scientific basis.

Robert W. Taylor, M.D.

ECHOES AND NEWS.

The Medical Department of the British Army intends to send a complete apparatus for skiagraphy with the Nile expedition. This is to be especially adapted to field use and easy transportation.

Owing to a high-handed usurpation of power by the Government of South Australia, in the management of the Adelaide General Hospital, the entire medical staff has been caused to resign. In so doing they receive the undivided sympathy of the profession, both in Australia and in England, and the Colonial Government will find it difficult to import respectable medical men to fill the vacancies thus created, a course which has been threatened.

At the last meeting of the New York County Medical Association, the Committee on the Relations of Physicians and Hospitals, Dr. George T. Harrison, chairman, made an extended report, of which the following is an extract:

"We have held many sessions, have listened to much testimony, and have found many witnesses, all agreeing that a plan of making nominations of attendants in the public hospitals has been adopted. This plan bars out the profession at large, and delivers all clinical material over to the control of the colleges, ostensibly for the benefit of the students, but really tending to the construction of a monopoly, which prevents any opportunity for the development and higher education of that large and able body of consultants who are not identified with the teaching faculties, thus making consultation fees professional perquisites. . . . Finally, from evidence submitted, it does seem to us as if there had been a successful attempt to construct a 'charmed circle,' entrance to which should be granted to very few, and then only by personal pull with the faculties, quite irrespective of scientific attainments. In other words, our matured opinion is that the so-called 'reorganization' was merely a conspiracy

to control the whole medical patronage of New York and County."

The report was adopted by the association.

Professor T. R. Fraser, of the University of Edinburgh, reported his scientific investigation of serpent venom to the Royal Institution of Great Britain, in a lecture on March 20th. He has been able, by gradually increasing administrations of the poison, to immunize rabbits until they could receive, without injurious effects, fifty times the minimum fatal dose, and during five or six months they safely received enough of the venom to kill 370 animals of the same size and species. In his experiments Professor Fraser chiefly used venom obtained from the cobra of India, although that from several African, Australian, and American reptiles was also employed with similar results. The blood serum of the immune animals was found to be antidotal when used, and to this serum the name "Antivenene" has been given. Another curious observation was that when the antivenene, or even the cobra venom itself was introduced into the stomach, a sufficient amount of the antidotal substance either found its way into or developed within in the blood currents to protect the animal against one and a half times the lethal dose injected subcutaneously.

Dr. James P. Parker of St. Louis, editor and proprietor of the *Annals of Ophthalmology and Otology*, died recently at forty-two years of age.

The official annual report of the State Commission in Lunacy for New York shows that on October 1, 1895, there were 20,216 inmates of insane asylums within the State. Of these more than 9000 were in the institutions of New York and Kings counties. The increase of patients in all the asylums had amounted to 1131, during the year then completed.

It is reported by cable to the lay press that Dr. Playfair has withdrawn the appeal from the recent decision of the now famous suit, and that efforts are being made for a final settlement. He has offered Mrs. Kitson $45,000, which she refused; but consented to accept $42,500 and the settlement by Dr. Playfair of all costs, the latter amounting to about $10,000.

On the 14th of April the French Academy of Medicine awarded the St. Paul prize of $5000, jointly to Messrs. Roux and Behring for their discovery of the diphtheria antitoxin.

A woman, residing near Mayfield, Ky., recently gave birth to five children at one accouchement. Four of the infants weighed four and a quarter each, and the other five pounds. All are in good condition and give fair promise of living.

One of the metropolitan papers has been devoting attention to the microscopic examination of the street dirt found adhering to the dress-skirt of a lady after an afternoon's shopping in New York. It reports to have obtained from one skirt, besides innumerable innocuous and unclassified organisms, the germs of fever, influenza, anthrax, and diphtheria. This means of transferring virulent matter from the streets to the house is, without doubt, a frequent one, and very naturally suggests two very important sanitary reforms, to-wit: cleaner thoroughfares and shorter skirts. The sense of supreme security which the new woman feels in this particular must be regarded as some compensation for her more or less complete self-denial of the ordinary female garments.

Columbus Hospital, a new charitable institution, located on East Twentieth street, New York City, was opened last week. It was formerly a part of the Post-Graduate School and Hospital, and is conducted by the Sisters of the Sacred Heart. Its capacity is limited to one hundred beds. Upon the rôle of its medical staff are some of the most talented physicians and surgeons of New York.

A cycling club for doctors is being organized in Brooklyn, N. Y. The movement originated among the students at the Long Island Hospital Medical College, but has now included a large number of the busy practitioners.

A novel tour for fashionable American physicians is proposed. Its promoters limit the party to one hundred, who will be selected from graduates of American universities, irrespective of particular schools of practice. These are placed under the direction of Dr. Gowing Middleton of Paris, and will visit in turn all the principal watering places and spas of Europe, thus acquainting themselves with the comparative value for the benefit of their future patients. The party is expected to leave New York City early in July and return in September.

By private letters from Central America, a most frightful epidemic of measles and mumps is reported to be raging in Costa Rica. More than ten thousand children are estimated to have died from these maladies during a period of three weeks. All official reports are vigorously suppressed, for commercial reasons.

The following not improbable story has found its way into the columns of the lay press: "Alfred Tennyson was once greatly humiliated by an eminent Scotch surgeon and professor in the Edinburgh University, who was entirely devoted to and wrapped up in his profession. Tennyson had occasion to go to him at one time to consult him in regard to some affection of the lungs. Years afterward, he returned on the same errand. On being announced, he was annoyed to find that the professor had no recollection of his name or face. He mentioned the fact of his former visit, but still the professor seemed not to know who he was. But when the professor had put his ear to the poet's chest and listened to the sound that the old ailment had made chronic, he at once exclaimed: 'Ah, I know you now! I remember you by your lung!' And Tennyson was the poet-laureate."

Sir William Priestley, Professor of Obstetrics at Kings College, and grandnephew of Dr. Joseph Priestley, the discoverer of oxygen, is the Unionist candidate for

Parliament from the Universities of Edinburgh and St. Andrew's.

ARRANGEMENTS have been made for two new courses in the second year at the College of Physicians and Surgeons of New York. One is in bacteriology, by Dr. T. M. Cheesman, and the other is in nervous histology, by Dr. Van Giesen.

THE *Virginia Medical Monthly*, so ably conducted by Dr. Landon B. Edwards for almost a quarter of a century, has been changed in name and frequency of publication to a semi-monthly.

THE June number of the *Buffalo Medical Journal* will be exclusively the product of medical women. Every detail will be placed in their hands, and it is needless to say that their best efforts will be in evidence when the next issue of this reliable periodical greets its readers.

DR. SUTER of Herkimer, N. Y., has proven by experiment that the heat developed by bullets during their passage is not sufficient to render them aseptic, as is generally stated. He found, at least, that the bacillus of anthrax would survive the ordeal, and infers that it is not safe to consider bullets sterile of the other germs.

RECENT investigations quoted in the current number of *Science* establish the fact that the essential poison of *rhus toxicodendron* can be nothing but an oil. Hence water will not remove the poison from the surface, but alcohol will, if applied freely.

A SERIAL known as the *Archives of Clinical Skiagraphy* is soon to appear in London, edited by Dr. Sidney Rowland. The first plate will be the osseous system of a child. Others will follow, showing obscure injuries of the bones entering into the formation of the knee-joint. The first issue will contain six plates.

THE Royal College of Surgeons, England, has awarded the Jackson prize to Dr. A. A. Kanthack for an essay upon tetanus, and the Walker prize to Dr. H. J. Stiles, for the best work on cancer.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., May 5, 6, 7, and 8, 1896.

(By Telegraph to THE MEDICAL NEWS.)

GENERAL SESSION.

FIRST DAY, MAY 5TH.

The meeting was called to order at 10.30 o'clock A.M., by the president, R. BEVERLY COLE, M.D., of California.

Prayer was offered by the REV. DR. MCDONALD, after which addresses of welcome were delivered by DR. FRANK M. RIDLEY and HON. JOHN TEMPLE GRAVES.

Announcements were then made by the chairman of the committee of arrangements, after which PRESIDENT COLE delivered his address. (See page 505.)

SECTION ON SURGERY.

FIRST DAY—MAY 5TH.

The Chairman, DR. C. A. WHEATON of St. Paul, in making the annual address, reviewed at some length the history of this section of the association, and mentioned the names of many men who have been prominent in its work in years gone by. He deplored the fact that many of these men too often absent themselves from these meetings, as it deprived the section of their counsel and assistance, which is so absolutely essential to its success. Among other leaders in surgery years ago, he mentioned Sir William Jenner, Morton, Wells, and Duncan. He stated that he hoped all present would add to the laurels of the American profession, and amalgamate and strengthen this organization. In his opinion, there was not a successful specialist in any branch to-day who was not, in a large measure, dependent upon general medicine for his following and success, and therefore he was obligated to attend these gatherings, to participate in its labors, and reap its justly-earned benefits. In conclusion, Dr. Wheaton said: "If a man is of stout heart, a good campaigner, and has a large income, he may be able to attend all the other association meetings, but to this one he should pledge a special fealty, because of its national character, its cosmopolitan personality, which makes it so interdependent, and, finally, because the character of work done by this section reflects, in a large degree, the quality of the whole."

DR. CARL BECK read a paper on

SUBPHRENIC ABSCESS IN ITS RELATION TO PYOTHORAX.

He stated that of five cases of subphrenic abscess, which he had observed, only twice was he able to make a correct diagnosis before operation. The fact that subphrenic abscess is very often confounded with pyothorax is well known, and such errors impress one gravely with the necessity of widening his limited diagnostic knowledge upon the subject. In referring to the treatment the author stated: "The history is the most important guide in differentiation. In subphrenic abscess there is generally a history of a previous abdominal disturbance. There is no history of cough and expectoration as in pyothorax. The heart is little, if at all, displaced, and there is no ectasy of the thorax or of the intercostal spaces. In the lungs vesicular breathing is found below the clavicle, the pectoral fremitus is also clearly perceptible. There is a well marked limit to the region of vesicular breathing below which the expiration murmur is replaced by amphoric sounds. Deep inspiration pushes the boundary line of the vesicular breathing much further down into areas in which formerly no respiratory murmur could be perceived. This would indicate a well-marked separation between the lungs and the abscess cavity, the boundary line of the lungs protruding toward the abscess cavity during deep inspiration. It is sometimes impossible to distinguish an encysted pyothorax from a subphrenic abscess. The pathognomonic signs of such effusions urged by Leyden were absence of cough and expectoration, slight displacement of the heart

and rapid change of note if the patient is rapidly turned. According to my observations, however, pleuritic effusion, particularly pyothorax, sometimes occurs without these symptoms." Dr. Beck discussed at some length the method of treating subphrenic abscess, and stated that the same aseptic precautions should be observed in this as in any other operation.

"If," said the author, "the first trial of the exploratory needle result negatively, the needle should be reintroduced several times into different portions, as the cavity may either be of small extent, may contain a cheesy accumulation, or may be divided into several minor cavities by adhesions. In the first event a cavity may be missed altogether by the exploratory needle, and in the second, the needle being introduced into the solid cheesy mass, it can draw no pus. After each negative result, a wire should be pushed through the needle, which must not be of too small a caliber. Thus some pus, which had remained adherent to the inner surface of the needle, will become attached to the wire. Occasionally it will be useful to fill the syringe with sterile water after the operation and force the water through the needle into a clean dish. In case cheesy masses are present, small particles are sometimes drawn into the caliber of the needle which cannot be seen with the naked eye, but which by being mixed with the sterile water, can be recognized under the microscope. In case the microscope does not give sufficient information, resort should be had to cultures of the fluid. T. Brown, in a case of subphrenic abscess, which he took for pyothorax until after operation, found cultures of the bacillus coli communis in the aspirated pus. He very properly emphasizes that, when pus from this region yields on culture, a mixed or pure growth of baccillus coli communis, there is a strong probability that the point of suppuration is situated below the diaphragm. The treatment of subphrenic abscess is practically the same as that of the pyothorax, that is, resection of a piece of rib. Only resection secures a sufficiently wide opening for thorough evacuation."

Dr. Alexander Hugh Ferguson of Chicago, read a paper upon

THORASCOPLASTY IN AMERICA (SCHEDE'S) AND VISCERAL PLEURECTOMY, WITH REPORT OF CASES.

Thorascoplasty as first done by Schede is an heroic measure for the otherwise hopeless cases of chronic empyema, and consists of the removal of the chest wall. Dr. Ferguson described his method of operating, and stated that some cases are not cured in spite of any operation performed for their relief. In his opinion, the fact that amyloid degeneration and tuberculosis does not contraindicate this operation, as stated by Schede, is only true within certain limits. The author first performed Schede's operation in July, 1895, in which case a good result was obtained. Healing by first intention was secured, and the patient was able to be out in a very short time. In spite of careful treatment for five months after the operation, owing to the fact that a long central sinus had not closed, the operation of visceral pleurectomy was performed, which resulted in the patient's complete restoration to health. This operation has been performed by several men in America since it was first instituted in this country in October, 1893, by Dr. George R. Fowler of Brooklyn.

Dr. Ferguson's paper was well illustrated by excellent photographs and drawings.

Dr. Bayard Holmes of Chicago, in discussing Dr. Ferguson's paper, said he had performed three operations of a similar nature, and two of the patients were now alive and well. There was no improvement in the third case, and the patient subsequently died of tuberculosis. The only adult on whom the speaker had operated, was a man, thirty-five years of age, who had been suffering with empyema which had been neglected for more than a year. In this case two attempts had been made to close the cavity by the Estlander operation before the operation described by Dr. Ferguson was performed. After the third operation the patient made a good recovery, although, it was necessary later to do two or three operations for the removal of infected bone, where the ribs had been infected from a discharge of pus.

Dr. James H. Dunn of Minneapolis, said he had been much interested in the past few years in the operation referred to by Dr. Ferguson, but that in his opinion most of the cases that have been operated on would have done equally well simply by the employment of proper drainage. "If, however, an operation is necessary, I believe the thorascoplastic operation is the best one to employ, but I think that this operation is much oftener performed than is necessary."

This has been the experience, as well of Dr. Dunn's colleagues, as of himself.

Dr. Ferguson closed the discussion by saying that Estlander's operation and also pleurectomy are grave ones, but Schede's operation is much graver. The photographs accompanying this paper show, in the author's opinion, how completely impossible it would have been for further nutrition to get to the surface of the pleura. In his opinion the order in which these various operations should be performed, was that the thorascoplastic should not be performed until Estlander's had failed, in view of the fact that many cases of this latter operation got well, and that pleurectomy should not be thought of until Schede's had been done.

Paper on

ENCHONDRITIS, ITS SURGICAL TREATMENT,

with report of a case and specimens, by B. Merritt Ricketts, M.D. of Cincinnati, O.

THE RATIONAL TREATMENT OF CARCINOMA OF THE CERVIX UTERI, AS VIEWED BY THE GENERAL SURGEON,

by George Wiley Broome, M.D., St. Louis, Mo., and

POST-OPERATIVE INSANITY,

by R. Harvey Reed, M.D., of Columbus, O., were all read by titles.

Dr. Howard Kelly of Baltimore, made some remarks concerning his method of treating

EXTRAUTERINE PREGNANCY.

He spoke of several causes for error in the diagnosis

and treatment of this affection and mentioned that he had mistaken for extrauterine pregnancies dermoid cysts, pelvic abscesses, and small ovarian cysts, all of which he evacuated through the vagina. In his opinion it is rarely necessary to open the abdomen for this purpose.

Dr. Nicholas Senn of Chicago entirely agreed with Dr. Kelly.

Dr. Kelly closed the discussion by advising operators to be careful of the rectum and to keep clear of the uterine arteries and the ureters.

Section on Obstetrics and Diseases of Women.

First Day—May 5th.

The meeting was called to order by the chairman Dr. Joseph Taber Johnson of Washington, D. C., who read an address upon the

Recent Progress in Obstetrics and the Diseases of Women.

He first considered puerperal infection, its causation and treatment, saying that this form of infection had been the cause of much writing and discussion during the year. While something has been added to scientific knowledge of the history and behavior of certain pathogenic germs, the general course of treatment of these cases has been simplified and shortened. In the treatment, the best instrument is the index finger, with which portions of afterbirth or membranes can be removed, using, if necessary, bimanual pressure under ether.

As regards hysterectomy for puerperal infection, it seems to be gaining ground, notwithstanding the opposition of Lusk, Price, and a number of other prominent men in this country and abroad, though the cases, where it is indicated, seem to be very few.

Symphyseotomy, since its revival, has been gaining prominence as a substitute for difficult high forceps operation, craniotomy and Cæsarean section. In perfecting the technic of the operation, the aim has been to deliver the child without laceration of the parts about the urethra, and to so secure the separated symphysis that perfect union would result. In a number of cases, it has come to the knowledge of the writer that copious hemorrhages have taken place from laceration of the vascular tissues about the urethra,

The next subject considered was placenta prævia. Nothing new seems to have been added during the year, except the suggestion that hysterectomy be done for the control of the hemorrhage. The diagnosis is generally not made until the occurrence of the latter.

The surgical treatment for uterine displacements was then considered at considerable length, after which the author passed on to anterior colpotomy, vaginal versus abdominal operations, fibroid tumors, etc.

Dr. Henry P. Newman of Chicago read a paper entitled

A Note on Stenosis of the Cervix as a Factor in Uterine Disease.

He said that twenty years ago this subject was one of the topics of great interest among gynecologists. The literature abounded with learned and exhaustive treatises upon the pathology and treatment of the affection. Notwithstanding the amount of literature formerly written upon this subject, the hundreds of operations recorded by older gynecologists and the nicely adapted instruments that remain as evidences of the reality of stenosis of the uterine cervix, there are some modern authorities who deny the existence of this affection as an anatomical fact. Stenosis was defined as a narrowing of the caliber of the canal, and may be situated at the external os, the internal os, or may include the whole extent of the canal. This condition causes sterility and dysmenorrhea by offering a mechanical obstruction to the entrance of the fecundating element, and by preventing the free discharge of the menstrual fluid.

The author then considered the hygiene of puberty, saying that among the higher educational circles there is already a tendency to demand for girls the same physical advantages that are in vogue in our boy colleges. In our rapid transition from childhood to maturity, the activities demand full general nutrition and conservation of the entire physical constitution. But at this period, the growing woman is pushed to her utmost to support the intellectual and emotional faculties. When the first corset is put on, the growing body is constricted and deprived of the necessary freedom of respiration and circulation. In the radical changing of these conditions lies the rational basis of the treatment of cervical stenosis.

Dr. Sellman of Baltimore, said many young women suffered month after month from painful menstruation, due to retained menstrual fluid. At the last meeting, he spoke of curetting these cases, believing that we accomplish very little oy dilatation. He reams out the diseased membrane or dense fibrous tissue with reamers of different sizes, according to the individual case.

Dr. Stone failed to see why Dr. Sellman's reamer was any better than a curette in skilful hands.

Dr. Hall of Cincinnati, said if we expected to cure cases of dysmenorrhea by dilation of the cervix, or by the reaming out process referred to, making the canal larger, we would be mistaken in our results. He could see how curetting the necessary amount of cervical tissue to leave a large opening might possibly result in a worse condition than would follow dilatation of the cervix.

Dr. I. S. Stone of Washington, D. C., read a paper entitled

How to Remove Pus Tubes Without Rupture.

He illustrated the method by exhibiting a diagram showing the application of clamps to uterine and ovarian vessels before enucleation from the anterior surface of the abscess wall. He summarized the application of this method as follows: It gives more space for careful enucleation. The larger blood supply is tied off before enucleation begins, and no severe hemorrhage can occur during or after the operation. Smaller silk or catgut can be employed, as no *en masse* ligatures are used. If rupture is avoided, there is no need of flushing or drainage. It facilitates enucleation by affording another point of cleavage, namely, from anterior surface of the pus sac. It facilitates exsection of the uterine cornua.

Dr. Stone exhibited a huge pyosalpinx, nearly nine

inches in circumference and fourteen inches in length, which he had recently removed after the manner described in his paper.

Dr. W. G. MacDonald of Albany, read a paper upon

THE PRESENT STATUS OF ECTOPIC PREGNANCY.—A SURGICAL DISEASE.

He said the surgery of ectopic pregnancy is mature rather than old. The pathology and principles of treatment are already established. Yet women are dying every day from ruptured ectopic pregnancy with no effort being made to rescue them, because the condition is not recognized during life. The reason lies principally in the fact that much of the literature has been controversial, abstract, and involved. Pathology and methods of treatment have obscured the most important general topics of clinical history and diagnosis. Favorable results are more desirable than fine pathological distinctions, or beautiful frozen sections. All that is needed to complete the chapter of ectopic pregnancy in the history of surgery, is a living appreciation of its importance by the general practitioner. Such a condition obtains in appendicitis is generally understood and establishes the practice. What is required is a primer on ectopic pregnancy, direct in pathology, clean in diagnosis, and definite in treatment. Such a compend may not be absolutely true in all its statements, probably will not be, but it states general truths, the basis of action. The more descriptive pathology is involved by the expression of opinion and of contentions, the less it is likely to create distinct conclusions. There is no symptom pathognonic of ectopic pregnancy at any period of its history.

Diagnosis only follows careful study of the clinical history, and painstaking physical examination. There are two general propositions which should be generally appreciated in the diagnosis of ectopic pregnancy. First: Any woman who, during her child-bearing period, presents herself with symptoms of disease of the organs of generation, of recent origin, either new or entirely different from those heretofore experienced, if associated with any of the early symptoms of pregnancy, demands at once a careful examination. Second: Abdominal pain, either continuous or intermittent (colic) is always an important symptom and requires the fullest investigation as soon as the complaint is made. Anodynes, without examination, are a too frequent source of death in abdominal diseases.

The treatment of ectopic pregnancy is surgical. Exceptions are to be decided by the consultant or operator. It is to be undertaken as soon as a diagnosis is established. Much sentiment has been wasted and many valuable lives sacrificed in order that a deformed or a paralytic child might arrive at a period where there was a little hope that it might live after delivery. Many cases are emergency surgery and require immediate operation.

All cases of rupture in the interstitial variety belong to this class. The first conditions to be met in operation is the immediate and complete control of hemorrhage. The other steps may be completed more deliberately. Here, as elsewhere, every effort is to be made to close the abdomen after the complete removal of the diseased gestation sac, ruptured Fallopian tube, blood and placenta. Ideal conditions seldom present themselves. A rational conservatism in the conservation of the patient's blood and the prevention of shock will often lead to the employment of expedients, such as suturing the gestation sac to the incision or the use of gauze tamponade, with secondary suture. Saline transfusion either direct or intermediate is more valuable than cardiac stimulants, in the treatment of shock with hemorrhage.

Complete tubal abortion, if diagnosticated, will seldom call for surgical intervention. The fetus is expelled into the abdomen, dies from the rupture of its membranes and hemorrhage, and is absorbed. Many broad ligament pregnancies get well under a purely expectant plan of treatment. There is no hope of convincing the few remaining advocates of electricity of their error, and admonition does no good. The report of seven personal cases illustrating the different conditions met in the disease concluded the paper.

Dr. Joseph Price of Philadelphia followed with a paper entitled

SYMPTOMS, DIAGNOSIS, AND TIME FOR OPERATION IN RUPTURED TUBAL PREGNANCY.

The occurrence of tubal pregnancy is regarded in widely different light by the theorist and the surgeon who has learned to deal with it practically, and who has accordingly come to understand the manifold directions in which speedy disaster may swoop down upon unfortunate women subjected to this calamity. As to the causes of aberrant gestation, we are to consider them both as anatomical and moral. They may have their origin in anatomical loss of structure, or in perversion of function, such as absent ciliary motion in the epithelium, or in absolute disease of the tube, or in the fright of illegitimate conception. Causation can rarely be determined with certainty; there are many agencies which operate to produce the trouble. The character of the attack, the whereabouts of the patient, her employment, are always interesting considerations.

Ruptures with large effusions are easily recognized upon examination. The finger detects an ill-defined, boggy tumor, the uterus enlarged and posterior, or pushed well to one or the other side. If the rupture is quite recent, it may be difficult to define a tumor of any character; there is simply a feeling of general resistance. In examinations made one or two days after rupture, it is easy to define the irregular, boggy tumor, also to locate the uterus, determine its size, position, and mobility.

Dr. Price is convinced, fortified by his own experience, counting now 128 cases with five deaths, that the operative treatment is the only one to be considered. He is fully satisfied that these pregnancies are rarely in the broad ligament. He regards the chief danger of the operation, the hemorrhage. If the patient is found so weak as to render operation an almost certain failure, he resorts to salt water transfusion in order to restore the arterial tension. Rupture with fatal hemorrhage is the most frequent termination; pyemia, septicemia, and peritonitis are much rarer. Basing his conclusions upon his own clinical experience, he holds to tubal origin and intra-peritoneal

rupture, and that all that follows tubal rupture is within the pelvis and peritoneal cavity, and not within the leaflets of the peritoneum forming the broad ligament.

Dr. Eastman of Indianapolis related a case where a physician tried to kill a fetus by electricity and failed. When the patient was *in extremis* she changed physicians. On opening the abdomen Dr. Eastman found a sac containing a living child in an advanced gangrenous condition, which he removed. He believes all extrauterine pregnancies are primarily tubal.

Dr. Reid of Cincinnati has seen cases in which the primary rupture has occurred in the broad ligaments with definite extension of the tumor inward and not upward, although its upper margins could be clearly outlined. The tumor became stationary and finally disappeared.

Dr. Baldwin of Columbus had eight cases of ectopic gestation within the last few months, which were operated upon early and recovered. The subject was further discussed by Drs. J. C. Carpenter, M. B. Ward, and J. H. Letcher.

Section on Neurology and Medical Jurisprudence.

First Day—May 5th.

Dr. T. D. Crothers of Hartford, Conn., the chairman of the section, presented the usual address. He commented upon the growing importance of neurology, and the legal relations and possibilities constantly growing out of present conditions, and spoke of the numerous publications on this subject during the past year. Literally, a new field of medicine is coming into prominence. Neurology is a general topic to be studied by both the specialists and the general practitioner. Dr. Crothers thought the great error in medical training to-day is, the the failure to teach how to observe accurately and how to estimate and compare the results of observation, and this applies particularly to neurology. Preventive medicine, the germ theories, the mysteries of chemical physiology, and all the vast range of "new lands" which are opening up before the student, are insignificant compared with the unknown power of mind, brain force, and what is called nerve energy. The present treatment of crime, insanity, and drug manias by legal methods, has not kept pace with the march of science, so that it is no wonder that expert testimony has fallen into disrepute. The time has come for every student of medicine to assist in clearing up the realm of mystery and superstition, relative to the mental phenomena of neurology. When neurology comes into general science, when jurisprudence becomes an exact study founded on certain definite facts, then the injustice and odium of the present will pass away. Dr. Crothers said that the one central fact which would never be forgotten is, that all nerve phenomena and brain activities are the operation and manifestation of fixed and definite laws.

Dr. J. T. Searcy of Tuscaloosa, Ala., read a paper entitled

Intoxication and Insanity.

He limited the meaning of the word intoxication to the injurious effects on the cerebrum of toxic agents present in the circulation, the symptom of intoxication being those that belong to the brain, this organ being exceeding sensitive to the action of certain agents. The exceedingly soft colloidal character of the functionating central parts of its nerve cells and fibers render them more sensitive to some agents. The nervous system may be divided into sensating and non-sensating structure. Sensibility in the human being is carried to such a degree of centralization that the cerebrum is practically the only sensorium. This physiological fact gives ready explanation to many of the symptoms of intoxication. The word "insanity" is more properly a popular or a legal term than a medical one, meaning that the person has reached such a degree of aberrant conduct that he has to be restrained. It indicates an extreme degree of cerebral defectiveness, there being other grades of impairment above the insane level. Cerebral intoxication arises in the person according to the character of the agent and the particular brain; that is, according to the toxin and according to the abnormality or idiosyncrasy of the particular brain. Toxins such as ptomaines, leucomaines, and other toxic albuminoids, arise from the disintegration of disease in the system besides which there are natural waste products which if retained prove highly toxic. Microbic disintegration of cerebral structure proper is not often seen. Diseases affecting the general system, like the exanthems, fill the circulation with toxins. Some brains being very sensitive under these conditions. Cerebral intoxication from disease in different organs of the body, varies with the organ. The effects of alcohol generally begins in the cerebrum. We may very correctly suppose that whenever we arrest or abate pain with a toxic we do it by hardening the axis cylinders of nerve lines, or the central parts of nerve cells, in this way preventing or lessening their functional motion.

Dr. Frederick Peterson of New York, thought the chief means of treating these cases, which arise from auto-intoxication, as by a properly regulated diet, milk, vegetables, and so on, by washing out the stomach and intestines with hot water, and by the use of certain antiseptics like salol, given in pretty good doses two hours after meals.

Inebriety in the Etiology of Insanity,

by Dr. I. N. Quimby, Jersey City, N. J., was read by title.

Dr. G. W. Drake of Chattanooga, Tenn., read an article entitled

Man's Brain and Mind: The Former Sometimes Insane, the Latter Never.

He said a sane brain is one in which all its cells and cell derivatives—fibers and other material substances—are in a normal state chemically, physically, and vitally. Chemical analysis of the different parts of the brain is not alone sufficient to enable the neurologist to judge of its sanity, nor is microscopical examination adequate, because neither will reveal the relative position of molecules in a cell or atoms in a molecule. Man is a *triune* being, consisting of a material *ego*, a sensible *ego*, and an intellectual *ego*, body, spirit, and mind. Dr. Drake said he did not believe in the existence of mental diseases, or dis-

eases of the sensible *ego*, disease being rather a disarrangement of matter in the structure of one or more cells of the body. The sensible *ego* is always ready to exercise its faculties in the various brain centers, but it is necessary that the peripheral and central organs must be in health in order that the sensations may become conscious, normal impressions. There is a material basis for every pain and every subjective symptom of disease or discomfiture. Brain culture, as a physical science has not received proper attention. The cerebral centers should be duly exercised in order to enhance their capacity, and brain sanitation is conducive to sanity.

The mind is never insane. Its brain machine may break down and need adjusting, but the mind cannot be injured by traumatism, auto-intoxication, or bacterial toxins. There is no difference in the members of the human family, Hottentot, Mongolian, or European: as to their minds, the difference is only in the structure of their brains.

The chairman named Dr. Harold N. Moyer and Dr. Elmer S. Pettijohn to fill the vacancies on the executive committee.

A NOTE ON THE PATHO-MENTAL EFFECTS OF DEGENERATIVE HABIT

was read by Dr. H. S. Drayton, New York City. He referred to Dr. Henry Maudsley's statement that a man is "By no means hopelessly chained down by the weight of his inheritance, for there is something else that makes fate and that is education."

Habits, however acquired, produce in time conditions in mind and body that of themselves reflect a healthful or injurious nature. If vicious habits are persisted in they accomplish alterations in the substance and relations of the cerebro-spinal organism that are abnormal and degenerate. The form and constitution of the brain bear a particular relation to mind capacity and character. Though habit has its co-ordinate factors in the cerebral substance where molecular changes are produced with facility and effects correspondent to the duration of the habit. Dr. Drayton referred to Dr. Elmer Gates' experiments on the color sense of dogs, proving that the forced exercise of that sense for a period had a result in decided increase of brain tissue in the color area.

Conversely, disease of mind faculty is attended with declension and disease of the cell elements of the co-ordinate center and decline in strength. The disturbances of function wrought by the practice of taking alcoholic beverages daily belong to our common stock of knowledge, and represent generally, or analogously, what of nerve injury is done by toxic narcotics as a class, depressing the vital tone of every organ of the body. The president of this section, after years of critical observation, has said: "The tendency in nature being toward the maintenance of the perfect type, we may look for an endowment of new normal tissue where all the conditions are favorable, and under such circumstances a cure, or what is popularly called 'reformation,' takes place."

Dr. Charles H. Hughes of St. Louis, Mo., opened the discussion on these papers. He thought it rather unnecessary to emphasize the essential difference between the brain and the mind, and considered it settled that the consideration of the latter was exclusively within the realm of metaphysics, as science deals only with matter.

Dr. W. H. Burr continued the discussion, expressing his approbation of Dr. Searcy's paper and Dr. Hughes' remarks. He said that, in his opinion, in the majority of cases of hypochondriasis there is at the bottom a pathological condition, often a state of auto-intoxication.

Dr. Sanger Brown referred to the recent advances which have been made in the conception of the neuron, owing to the investigation of Dr. Berkeley of Johns Hopkins University, who experimented upon dogs, feeding them excessively with alcohol for seven or eight months, until many of them died of convulsions. Definite changes in the body of the neuron were found. Every safeguard was used to prevent the experiments from giving misleading results.

Dr. Searcy also referred to Dr. Berkeley's experiments at Johns Hopkins.

Dr. Kleinsmith of Washington, also discussed the papers.

Dr. Frederick Peterson of New York, presented an article on the

MEDICAL AND SURGICAL TREATMENT OF EPILEPSY.

He referred favorably to the so-called opium bromid treatment of Flechsig, having found it of use, especially in old and obstinate cases. In epilepsy, resulting from auto-intoxication, much benefit may be obtained by the regulation of the diet. Dr. Peterson spoke further of the moral treatment of epilepsy and the unfortunate position of the victims of this malady, reared in idleness, neglected in mind and body, their only recourse being almshouses and insane asylums. He mentioned the Craig Colony in New York, with accommodation for three hundred patients. The surgical treatment of epilepsy he summed up as follows:

(1) In about one per cent. of all cases of epilepsy an injury to the head will be found to be the original cause.

(2) In a much larger percentage, an old meningeal hemorrhage, congenital or acquired in infancy, giving rise in addition to the epilepsy, to various degrees of paralysis, idiocy, or other cerebral symptoms, and presenting on examination atrophic, sclerotic, or cystic sequelæ to the primary lesion, will be found to be the cause.

(3) In the present state of our knowledge and experience, those cases due to meningeal hemorrhage should not be operated on at all.

(4) In the very small number of cases having injury to the head as a cause, the epileptic habit is so strong and the changes in the brain usually so old and so deep-seated, that operation, as a rule, does not cure, and only seldom permanently diminishes the frequency of attacks.

(5) Of miscellaneous traumatic cases where surgical procedure seems justifiable and is undertaken, a cure may be reasonably expected in perhaps four out of every hundred cases operated upon.

(6) The removal of a cicatrix from the cortex supposed to be the epileptogenetic nidus will naturally be followed by the formation of a new cicatrix in the surgical wound, and is scarcely a defensible procedure.

(7) The most recent the injury the greater will be the promise of lasting benefit. If a hundred cases of epilepsy could be selected in which the trauma dates but a few months back, trephining and ablation of the morbid tissues would doubtless prove curative in a very large percentage of cases.

Dr. Campbell of Knoxville, Tenn., in discussing Dr. Peterson's paper, deplored the fact that there was no satisfactory arrangements for the State charge of epilepsy and urged the profession to make vigorous efforts to this direction in order that other States might follow the example of New York and make similar provision for the care and education of this class of patients.

Dr. John Punton of Kansas City, Mo., said that he was entirely in accord with Dr. Peterson's views as to surgical procedure in epilepsy and that the cases in which it was of advantage were very rare.

Section on Children's Diseases.

First Day—May 5th.

The section was called to order by Dr. A. C. Cotton of Chicago, who read an address entitled

has the milk laboratory come to stay?

Dr. Cotton stated that in the selection of the subject upon which to address the Section he had been guided somewhat by the recent interest taken in the elaboration of infant food. There are three quite defined classes of infant feeders: (1) Those who regard the infant as belonging to the carnivora; (2) Those who would place the nursling of the human species among the granivora, and (3) Those who early place the young in the omnivorous class. Says one theorist, "Raw milk is poison"; another "Bottled milk is indigestible"; another "Starch is indigestible"; still another "Cereals are unnatural."

Again, "cows' milk, even if freed from pathogenic bacteria, is ill adapted to the stomach of the human infant because its constituents do not bear the same proportion to each other as in breast milk." So we attempt to render the proportions of the constituents the same as in the natural product of the maternal breast. Along this line the addition of lime water the use of dilution and of the separation and reunion in exact proportions of the constituents has been tried. Still the infants have continued to die. But I believe the milk laboratory has come to stay. The advantages lie in the direction of more exact manipulation, greater precision and accuracy in the keeping of records. We are securing through these laboratories in Chicago very gratifying results. In the milk laboratory the cerealists find the best facilities for testing the value of their theories. The experiments of Dr. Leeds, of Hoboken, have stimulated an effort to still further eliminate the casein without reducing the per cent. of proteid substance. It seems to have been successfully attempted by replacing a large part of the rejected cow proteid with egg albumen. At first it was thought that egg albumen would be coagulated when Pasteurization was attempted, but this difficulty has not proven insuperable.

Dr. C. G. Slagle of Minneapolis, read a paper upon

diagnosis in disease of children.

The author reviewed largely the subject of diagnosis in general since it is unsatisfactory otherwise to discuss diagnosis in this special department. The queries arise: First, What is the import and advantage of diagnosis? Wherein its intricacies, and what relation does it sustain to other branches of medicine? Second, What special feature does it possess in its relation to diseases of early life? Third, What is the present status of this department of our art as compared with the past? Fourth, Can it be facilitated or any way rendered more accessible and comprehensible to our students and young practitioners? Fifth, Is there a demand for a treatise on the diagnosis of the diseases of infants and childhood, general and special, medical and surgical? Many men never make good diagnosticians, and many good diagnosticians frequently make mistakes in diagnosis. His definition of a good diagnostician would be one with the faculty of recognizing diseases so as to locate and name them with facility by the correct interpretation of their pathological and clinical symptoms, and thus be able to differentiate one from all others. The man who can render a correct diagnosis at his first examination of the child in four-fifths of his cases, is a fairly good diagnostician. The practitioner will be successful in pediatrics precisely in proportion as he has given attention to all other parts of the art. But many ailments of children simulate each other so closely it is difficult, even impossible, to render a correct diagnosis. Many affections of the young differ from the same affections of the adult, in their clinical symptoms and sometimes in their anatomical aspect. And not only do diseases hybridize in the young, but there are many diseases peculiar to that period.

Dr. J. A. Larrabee of Louisville complimented the paper and spoke of the importance of the subject. Those who make instantaneous diagnoses often make very grievous errors. Although men may differ in their diagnostic capacity, as in other capacities, still "genius is only another name for hard work." We must use all our senses and all available knowledge, and even then we will sometimes fail to make a correct diagnosis. Often much may be accomplished by a careful study of the face of the child, which frequently is very expressive.

Dr. Samuel E. Woody of Louisville concurred with the essayist as to the many difficulties of diagnosis in children. These may be overcome only by the greatest amount of tact and patience. But diagnosis is not more difficult in children than in adults. The thinner chest and abdominal walls of the infant, as well as the expressiveness of the countenance, tend to make the diagnosis easier. In the employment of the Rontgen photograph, the thinness and translucency of the tissues in the child is an advantage.

Dr. J. A. Larrabee of Louisville followed with a paper upon the

pediatric therapeutics, as proven by experience.

The paper opened with the quotation: "Prove all

things; hold fast that which is good." Widely different effects may be obtained from the same drug in different doses. In children, the best are usually to be obtained from small doses, frequently repeated. In the discovery of new remedies, we have been more successful, reasoning by synthesis than by analysis. The author condemned the use of the polypharmic compounds, emphasizing the importance of the use of simple prescriptions. At any rate, the prescription should be the creation of the physician, and not of the pharmacist. The compound prepared by the manufacturing chemists too frequently contain elements which are directly opposed to each other in action, or elements which are not indicated in the same case, or elements which soon become non-effective. Too frequently they are simply shotgun prescriptions.

The author had obtained good results in entero-colitis by the use of 1–100 grain arsenite of copper in a four ounce solution, using a teaspoonful every fifteen minutes. One-fourth grain tartar emetic in a pint of water teaspoonful every half hour, controlled cerebral symptoms when the toxic dose would have increased discomfort. In acute tonsilitis, small frequently repeated doses of aconite and belladonna had proved valuable. Perhaps one of the most pernicious outgrowths of polypharmacy is the compounding of the therapeutic incompatabilities. The author gave a number of illustrations along this line. He believed the use of antiseptics good practice. Thus, the essayist had obtained good results with listerine and borolyptol in infants with lactic acid fermentation in the stomach as well as in children with putrefactive changes in intestinal ingesta, after removal of ingesta by enema and purgation. Guiacol has proven to be the ideal intestinal antiseptic. Indeed the author believes this agent is the effective one in the so-called Woodbridge treatment. However, in enteric diseases it is a better plan to prevent the complications than to trust to their treatment when they appear.

Dr. Larrabee described the coal-tar products, antipyretics, as indispensable agents in infantile therapeutics. The *antitoxin diphtheriticum*, while not a specific for diphtheria, is an agent of great value. Asafetida in the form of the tincture, combined with milk of magnesia is an excellent remedy for the distressing colic, intestinal acidity, and constipation. Also its administration by the mouth and discharge per anum is of diagnostic value in suspected obstruction or intussusception. Also it is valuable in the sinking stages of pneumonia or capillary bronchitis. Emetics have fallen into disuse while the use of the stomach tube has grown in favor. Non-depressing emetics are of great value in warding off atelectasis in infantile bronchitis and pertussis. Turpeth mineral has supplanted all other irritant emetics. Systemic or centric emetics are out of place in such instances. The syrup of ipecac should be discarded as slow and uncertain and ineffectual. Besides the syrup is objectional.

Hydrotherapy is endorsed by all physicians, but practised by only a few. This method of treatment is of very great value, and should be more frequently resorted to. The wet pack at 98½ degrees is preferable to immersion. Often the best results follow the long-continued use of the wet pack. In bronchitis and pneumonia, water is the only expectorant indicated. Belladonna is best given in small, even minute doses, repeated at frequent short intervals. It has thus proven a valuable remedy in the low stages of fevers, cholera infantum, and pernicious intermittents. As a stimulant to the respiratory nerve centers, it is useful in the sinking spells of pneumonia. A number of cases of enuresis have been reported cured by atropia.

Dr. C. G. Slagle of Minneapolis, endorsed the paper, adding emphasis to everything the author said.

Dr. Henry E. Tuley of Louisville, thought the theory of the antitoxin is to neutralize the products of the germs, and it is our duty to get rid of the production of the germs, locally if possible. We are not justified in abandoning the use of the local treatment when we use the antitoxin. The use of the stomach tube is usually more effectual in infants than the use of emetics, when it is desired to empty the stomach.

Dr. I. N. Love of St. Louis, discussed the paper at some length, agreeing with the author almost entirely. He especially emphasized the use of water in diseases of children.

Section on Practice of Medicine.

First Day—May 5th.

The meeting was called to order by the chairman Dr. Wm. E. Quine of Chicago who read an address upon

The Advances in Therapeutics During the Year.

An epitome of the literature and some observations of the writer in relation to the therapeutic effects and *modus operandi* of bone marrow led him to the conclusion that the agent was of undoubted value in relation to the treatment of ordinary simple anemia and chlorosis and in cases of anemia of the more intractible kind. There is not conclusive proof that it has any therapeutic power beyond that which can be fairly ascribed to the influence of a readily assimilable organic compound of iron. We have no knowledge whatever that enables us to understand how it is possible for this agent to produce a curative effect in cases of progressive pernicious anemia, leukemia, and kindred disorders. It cannot act in the manner of an animal extract like that of the thyroid gland or suprarenal bodies which supplies a deficiency that is occasioned by incapacity of the organs alluded to, for in pernicious anemia and leukemia there is not atrophy nor inactivity of bone marrow. On the contrary this is hypertrophied and over-active. Moreover, evidence is wanting that bone marrow is a secretion or that it contains any ingredient which stimulates its own production. The subject is still *sub judice* and requires many careful observations to establish conclusions on solid grounds.

Fourteen cases of Addison's disease treated with the adrenals of lower animals, mostly those of sheep, are now on record. The favorite preparation appears to be a glycerite of the minced organs, given with a degree of freedom amounting to from fifteen grains to three drams of these organs daily. In about one-half of the recorded cases, improvement has been noted, and in a few of them the improvement has been very striking, but we are lack-

ing in information as to the stability of it. Quite as good evidence is furnished by medical literature that adrenal extract does injury in some cases of Addison's disease, as that it is productive of benefit in others. It is not difficult to understand in case of disease and incapacity of the supra-renal bodies, how the artificial supply of their peculiar products may make an important impression of a temporary kind; but it is not obvious how in case of advanced disease of those organs, the administration of sheep's adrenals for a few days or weeks, can make the patient so sound and well as to enable him to thrive ever after without the assistance of his own organs.

The treatment of typhoid fever was introduced by a presentation of the claims of Woodbridge of Ohio, and Thistle of London, in relation to their ability to abort the disease, or at least effect a cure of it, in every instance in which the treatment is permitted to have a fair trial. The improbability of the correctness of these claims was pointed out upon the basis of established knowledge of the etiology and morbid anatomy of the disorder; and it was shown that long before the physician has opportunity to prescribe his first dose the bacilli of the disease had already, to some extent at least, penetrated the walls of the bowel and migrated to remote parts of the body. It was freely conceded, however, that by processes of purgation and intestinal antisepsis meteorism could generally be obviated altogether, or if already present, dispelled. It was also conceded that under treatment of this kind, instituted early, the evacuations were never fetid; or if fetor already existed, it could, with considerable uniformity, be corrected in the course of a few days.

The writer also directed attention to the fact that the invasion of tissue and elaboration of toxins by the microorganisms of typhoid fever were not completed in a day, but were continuous and occupied many days. Hence it was plainly within the limits of rational probability to lessen the degree of concentration of infection in the intestinal structures, and the consequent liability to the destruction of them, as well as the degree of general toxemia and its attendant dangers, by prompt and sustained effort in the direction of preventing or restraining the process of continuous recruital from the lumen of the bowel. The author was of the opinion that the plan of treatment has a rational foundation, and is of real utility, but suspected that his friend, Dr. Woodbridge, has been led to erroneous conclusions by reason of the extraordinary mildness of the typhoid fever which has been prevalent during the last two or three years. The address excited a very heated discussion, especially upon the treatment of typhoid fever, and very strong and extreme positions were taken by the speakers on each side of the question.

General Session.

Second Day—May 6th.

The Secretary read the names of the members of the Nominating Committee.

An invitation from the Louisiana State Medical Society was read, inviting the members of the association to attend the next meeting to be held in New Orleans.

A motion expressing appreciation prevailed.

Vice-President LeGrand appointed the following committee to consider the recommendations in the president's address: Drs. N. Senn, Alonzo Garcelon, Jos. Taber Johnson, E. S. Lewis, and Dudley S. Reynolds.

On motion of Dr. Cochran of Alabama, the committee on National Department of Public Health was increased so as to include one member from each State.

Section on Diseases of Children.

Second Day—May 6th.

The entire time of the meeting was consumed in a discussion of the antitoxin treatment of diphtheria.

Dr. Elmer Lee of Chicago, read a paper in which he followed quite closely the statistics and arguments of Dr. Winters of New York in opposing the use of antitoxin. Horse-serum poisoned by germ culture has no natural place in the human blood.

The red blood-corpuscles are dissolved whenever horse-serum comes in contact with them. On the contrary, however, the fluid which patrols the entire body should be strengthened rather than decomposed and disorganized by the addition of morbid matter.

Dr. J. W. Stickler of Orange, N. J., concluded from his experience that when the heart's action is fairly good, when the system has not been seriously impaired, when the urine shows little or no albumin, antitoxin, judiciously used, is likely to benefit the patient, but when there is great depression of the vital forces antitoxin is contraindicated.

Dr. Louis Fischer of New York, emphasized some practical points in the combined effects of antitoxin and intubation, with special reference to infant feeding in malignant diphtheria. He explained the sudden deaths following injections of antitoxin as due to accidental entrance of air into the blood-vessels. He urged abundant and proper nutrition by stomach and by rectum.

Professor Edwin Klebs, late of Zurich, was present and brought forward in support of the antitoxin treatment the fact that control animals die, whereas protected animals injected with the same dose of the poison recover. He affirmed, however, that the immunizing power of the serum had not been demonstrated, but as to the curative influence of antitoxin the great mass of statistics agree that it is successful. He had found chinosol the best antiseptic to preserve the serum from the presence of other bacteria.

Dr. W. E. Cassellberry of Chicago, said that the use of antitoxin had reversed, his statistics and reduced a mortality of seventy-five per cent. to twenty-five per cent.

Dr. J. A. Larrabee of Louisville, considered the germ theory a germ fact. He had seen four cases die who he believed would not have died had they not used antitoxin, but he had also seen twelve cases survive that would have died without the antitoxin. He believed in vigorous sustaining treatment whether antitoxin was used or not.

Dr. Rose of Kansas had passed through an epidemic of diphtheria in which he and his partner had treated fifty cases with the antitoxin, and all recovered. In none of them had there been any irritation at the point

of injection; in only one did erythema occur. DR. THOMSON of Albion, Mich., DR. BELL of Atlanta, Ga., DR. HODGKINS of Connecticut, and DR. D. C. WILSON of Ohio, all gave favorable testimony from their experience confirming the value of the antitoxin treatment.

GENERAL SESSION.

THIRD DAY—MAY 7TH.

Meeting was called to order by the president. DR. NICHOLAS SENN of Chicago, delivered the

ADDRESS ON SURGERY,

For which see page 507.

It was decided to hold the next meeting in Philadelphia, and Dr. Nicholas Senn of Chicago, was unanimously elected president for the ensuing year.

ASSOCIATION OF AMERICAN PHYSICIANS,

Eleventh Annual Meeting, Washington, D. C., Thursday, April 30, 1896.

(Specially Reported for THE MEDICAL NEWS.)

OPENING SESSION.

At 11 o'clock the meeting of "The Immortals" of our American profession was called to order by the President, A. JACOBI, M.D., who after the minutes of last year's meeting had been approved as printed, proceeded to deliver his brief but pointed and graceful address. (See pp. 511).

His keynote was "The Unity of Medicine as of the Church."

Notice was then given of the submission of an amendment to the constitution increasing the limit of membership to 125 instead of the present 100.

DR. BUSEY, of Washington then took the floor under the heading of special business, and in an earnest speech urged upon the Association the desirability of memorializing Congress against the passage of the pending bill practically prohibiting vivisection in the District of Columbia.

The greatest danger lay the indifference of the general medical profession and the foolishly weak letters written by individual medical men in favor of a modified form of of the bill. Huge memorials from sentimental men, women and clergymen, were pouring in from every quarter, and but little organized opposition is in evidence. A strong committee of five consisting of Drs. Welch, Vaughan, Pepper, Edes, and Theobald Smith was appointed by the chair to draft a memorial.

The formal program was opened by DR. F. H. WILLIAMS of Boston in a short paper upon

THE ROENTGEN RAYS IN PHYSICAL DIAGNOSIS.

He presented to the Association an ingeniously simple instrument, the fluoroscope, by means of which the chest could be examined with the X-rays.

By means of this the upper border of the liver can be made out as it rises and falls in respiration, also the outlines and fact of movement of the heart and outlines of the spleen, all of which corresponded to tracings of the organs mapped out upon the surface by percussion.

In three very interesting cases, one of pneumonia and two of pulmonary tuberculosis darker areas could be distinctly made out, in one at the left base and in two at the right apex, which corresponded in each case to the area of dulness.

In the neck, the anterior line of the spinal column can be seen, and the rings of the trachea, separated by a lighter streak, corresponding to the esophagus, which permits the hope that foreign bodies in the latter, could be thus located.

As a contribution to the discussion, Dr. Sternberg read a letter from Dr. J. H. Stone, U. S. A., of Leavenworth, Kan., describing a series of experiments with the X-rays upon cultures at various pathogenic bacteria, with absolutely negative results.

DR. WILLIAMS remarked that like trials had given identical results in his hands.

DR. OSLER asked whether gall-stones could be detected by the rays?

DR. B. K. RACHFORD of Cincinnati, followed with a paper upon

LEUCOMAIN POISONING (CONTINUED),

which will appear in the NEWS.

DR. VAUGHAN asked what tests were relied upon for the detection of xanthin and paraxanthin, and if observations had been made as to whether leucocytosis was increased in these cases? The nuclei of leucocytes being now regarded as the chief source of such bodies.

DR. OSLER congratulated Dr. Rachford and also the association upon the careful study which was being made of these interesting substances in this country, as they were attracting much attention in Europe. He also asked whether the presence of Neisser's granules about the nucleus of the white corpuscles had been studied in these cases. These are found so invariably present in the various uric acid states and true gout as to be now regarded as almost pathognomonic of these conditions.

Other suggestions were made by DRS. BAUMGARTEN, PUTNAM, MELTZER, and DA COSTA.

In closing the discussion, DR. Rachford replied to Dr. Vaughan that the chemical tests relied upon were those given in the text-book of the latter, known as the "yellow residue" and "green scum" tests, but that the physiological test by injection into animals ranked highest. Both, however, corresponded in all of his cases.

In reply to Dr. Putnam's question, he stated that urinary examinations in the interval between the attacks gave no trace of xanthin, nor was it ever present in ordinary epilepsy.

DRS. V. C. VAUGHAN and GEO. D. PERKINS at Ann Arbor, Mich., then presented a communication upon

A TOXICOGENIC GERM FOUND IN ICE CREAM AND ITS PRODUCTS.

In August, 1895, they were furnished with some ice cream which had poisoned some fifty people in Northern Michigan and about a month later with some cheese which had produced severe nausea, diarrhea, and prostration in twelve persons. Upon examination the same bacillus was found present in both specimens. The symptoms pro-

duced in both cases were almost identical and in neither did any deaths result. The germ was thoroughly studied and the results given in detail. Most interesting among which were the facts that its growth in milk was accompanied by a *pleasant* odor of butyric ether; that it grows freely upon all fruits and vegetables, potassium salts are necessary for its growth, it resists prolonged freezing but succumbs to a heat at 58° C.

It does not produce any effect upon cats when given by the mouth in enormous doses, though rapidly fatal when injected. Experiments were conducted upon rats, mice, guinea-pigs, and dogs.

They were not successful in isolating the chemical toxic produced at the bacillus, but believe it to be nearly identical with tyrotoxicon and probably a proteid.

By some mistake a strong solution of the toxin was put into a bottle labeled "Nuclein Sol.," and ten minims of it injected into a human subject. Severe vomiting, with profound depression, followed by delirium and coma, rapidly ensued, but the symptoms happily passed off in about twelve hours. It was, however, nearly three days before the patient had recovered sufficiently to walk alone. The singular fact being that this dose produces no appreciable effect upon a guinea-pig, showing the human subject to be vastly more susceptible to this poison.

A spirited discussion followed.

AFTERNOON SESSION.

DR. SIMON FLEXNER of Baltimore, read the next paper upon

STATISTICAL AND EXPERIMENTAL STUDY OF TERMINAL INFECTIONS.

He asserted that the careful and systematic bacteriologic study of the tissues from the *post-mortem* room was of more importance than mere clinical observations. Bacteria were often found when least expected, and even negative results were not conclusive against their possible presence in other unexplored tissues. In 793 autopsies at Johns Hopkins Hospital, 255 were chronic cases of kidney or heart disease, and in 213 of these bacilli were found in appreciable numbers. Local infections, especially of peritoneum and pericardium, were most common. The organisms were of many species, the pyogenic cocci largely predominating, followed closely by the colon group. Cultures from them proved generally inert in animals on inoculation.

The avenues of infection were various but the most frequent were intestinal lesions. Chronic diseases are important as predisposing factors to bacterial invasion and in most of them death is actually caused by some so-called "terminal infection."

In other words these pestilent organisms will not permit us to even poison or soak ourselves to death, à lá Bright, in peace. Pathogenic bacilli are often present in health but can gain no foothold till the resisting power at the tissues is lowered by disease.

A series of experiments was reported upon the bactericidal power of blood-serum from cases of chronic disease in Johns Hopkins Hospital, compared with that of healthy subjects obtained at surgical clinics. The staphylococcus pyogenes aureus was rapidly destroyed by normal serum, also the cholera and typhoid bacilli, while the serum of cachectic patients was much less active. This bactericidal power of normal serum, though always marked, was extremely variable and a similar property was usually found in the serum of animals exempt from given diseases. Normal serum also destroys the toxins, as well as the bacteria.

DR. STERNBERG quoted experiments showing that placental blood was almost inert against bacteria, and suggested that antitoxins could not pass through capillary coats, and hence might be retained in the blood for long periods. This would explain the long after-immunity in some diseases; in others it is probably due to constant reproduction of antitoxins.

DR. BOND asked whether the number and condition of the corpuscles in the blood used had been observed.

DR. THEOBALD SMITH stated that recent experiments by inoculating animals with weak cultures of bacilli, waiting till some time after their recovery and then killing and examining tissues, had revealed the continued presence of bacteria in the organism as long as fifty days after recovery.

DR. BOLTON expressed surprise at Dr. Sternberg's statement in regard to placental blood, as Ehrlich had proved the transference of immunity from mother to offspring in a number of cases of tetanus, etc.

DR. STERNBERG regarded the immunity in these cases as due to the ingestion of the mother's milk.

DR. BOLTON replied that the same results had been obtained when the offspring were suckled by a non-immunized foster-mother. Both the offspring of an immunized mother reared on non-immunized milk, and the offspring of non-immunized mothers reared upon immunized milk, were alike refractory to infection.

DR. FLEXNER, in closing the discussion, replied that the corpuscles had not been studied, that Dr. Sternberg's statement puzzled him, as placental blood was found antitoxic in eighty-five per cent. of diphtheria cases, and that the tissues of guinea-pigs recovered from typhoid were found by him to contain well-marked typhoid bacilli several months afterward, which supports Lubarsch's findings that bacteria can resist destruction in solid tissues far longer than in the blood.

This was one of the most suggestive and interesting papers of the entire session.

DR. A. C. ABBOTT of Philadelphia, followed with a report of experiments upon

THE INFLUENCE OF ACUTE ALCOHOLISM ON THE NORMAL RESISTANCE OF RABBITS TO VARIOUS FORMS OF INFECTION.

These had been carried on under the auspices of the "Committee of Fifty" upon the "Influence of Alcoholic Liquors as Beverages."

The general drift of the results showed that alcoholic intoxication distinctly lowered the resistance to certain forms of bacteria, but not to others. The former included the whole strepto- and staphylo- group and the bacillus coli. The experiments were also made upon control groups of non-alcoholized rabbits simultaneously. The

practical difficulties of the investigation were found very great. In the first place, rabbits, being highly susceptible to these infections, it was hard to obtain a culture sufficiently attenuated to permit differences to be observed other than *post-mortem* ones, and yet of sufficient virulence to be active in every case. On the other hand, it was difficult to fix upon a "standard" dose of alcohol, which could be relied upon to produce intoxication, individual susceptibilities varying so greatly, as among men, and no satisfactory physical sign of intoxication could be found except that of a staggering gait, which was naturally hard to produce in a quadruped of such abstemious habits and conservative tendencies.

In order to reach this result such massive doses had to be given, as to be the equivalent of twelve to fourteen ounces of absolute alcohol in the human subject, and these were followed by such large and rapid losses of body-weight, as to raise the question in Dr. Abbott's mind, whether they did not lower resisting power, much as starvation would have done. Lastly, no combination, not even with mint, could be invented which would induce the animals to take the drug voluntarily. It had to be administered by a stomach tube, and this, in many cases, sooner or later caused abrasions of the esophagus and stomach, through which secondary infections developed with fatal results. The experiments up to date were reported in some detail, but the writer declared the investigation but partially completed, and that no definite conclusions could yet be drawn. This much could be said with certainty that the normal vital resistance of the tissues against invasion by the streptococcus pyogenes, staphylococcus aureus, and bacillus communis coli, was distinctly and invariably lowered by such doses of alcohol daily. The time of incubation of the virus was shortened and the lesions more marked. The result appeared to be due to the direct effect of the alcohol upon the tissues, as no change, whatever, in them could be detected upon careful microscopic examination.

DR. MELTZER asked whether injecting the alcohol hypodermically or by the rectum had been tried, and thought that the amount of water and green foods in the stomach might cause variations in the result.

DR. ABBOTT replied that neither of these methods had been tried, as the attempt was to reproduce the conditions of the human problem as closely as possible.

DR. H. C. ERNST of Boston followed with a paper upon

THE IDENTITY OF THE STREPTOCOCCI AND A DESCRIPTION OF A NEW VARIETY.

The position was taken that the action of all varieties of streptococci in the human organism was practically the same, due probably to their all producing a similar toxin and that there was hope that a single antitoxin might be developed which would be effective against all of them.

The new variety now introduced to the profession had been obtained from the blood and peritoneal fluid of a case of secondary puerperal infection. The symptoms were characteristic but very severe and death occurred in convulsions upon the thirteenth day. The bacillus presented the usual "strepto" characteristics and reactions, but with certain distinct peculiarities which entitled it to the rank of Streptococcus Aureus Liquefacillus, which had accordingly been conferred upon it.

It was found only feebly virulent in guinea-pigs and rabbits. The paper was illustrated by water-color drawings of cultures.

DR. STERNBERG remarked that there could be no question as to its admission to the strepto group with the rank of a variety, and DRS. ABBOTT and BOLTON also expressed themselves convinced and welcomed it to the ranks of the pyogenic brotherhood.

DR. THEOBALD SMITH of Boston, then read a report of a carefully planned series of ingenious experiments upon

THE CONDITIONS INFLUENCING THE APPEARANCE OF TOXIN IN CULTURES OF THE BACILLUS OF DIPHTHERIA.

The principal factor appeared to be the amount of muscle-sugar present in the culture bouillon which acted mainly by promoting acidity or delaying the development of alkalinity in the solution. His experiments confirmed those of Sprague that the higher the proportion of muscle-sugar, the less the amount of toxin developed. This was illustrated by a series of charts showing "curves" of both substances. Anything above 0.2 per cent. of muscle-dextrose practically inhibited toxin formation, and this proportion varied greatly in the beef of different localities. The sugar acts also by delaying the formation of the toxin to such degree that it can be consumed by the bacilli as fast as formed. In mixed cultures the toxin forms more rapidly because the sugar is destroyed by the other germs.

DR. ERNST and DR. BOLTON asked some questions as to methods of preparing beef for bouillon.

DR. BOLTON'S two papers upon

DIPHTHERIA ANTITOXIN,

though brief and partial, were of great suggestive interest. The first was upon the presence of antitoxin in the blood of normal horses. Attention was first called in this direction by the fact that individual horses varied greatly in the degree of their reaction to diphtheria inoculations. Some animals appeared almost immune from the start. Upon investigation, he had found that out of twelve horses tested three possessed antitoxin in appreciable amounts. These showed very little reaction to the virus until very large doses were injected, but ultimately produced no stronger or larger amounts of artificial antitoxin than the others. Traces of antitoxic substances had also been found in the blood of human subjects, especially in children, and most markedly in convalescents from diphtheria. It soon disappeared, however, from the serum of the latter.

DR. FLEXNER said that these experiments confirmed Fischerl's results, who found traces of antitoxin in the blood in eighty-five per cent. of children examined. The same had been found in goats against cholera.

DR. SMITH added that some horses never produce antitoxin beyond a certain strength, no matter how long the inoculations were kept up.

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ORIGINAL ARTICLES.

LEUKOMAIN POISONING.[1]

BY B. K. RACHFORD, M.D.,
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THIS communication is offered as a sequel to the paper on the same subject which I read before this Association last year. At that time I presented the experimental and clinical evidence upon which I based the opinion that leukomain poisoning is a most important phase of auto-intoxication, which may manifest itself in at least three distinct but closely allied clinical types, viz.:

1. Leukomain Headache (True Migraine).
2. Leukomain Epilepsy (Migrainous Epilepsy).
3. Leukomain Gastric Neurosis.

Another year of work in this field has enabled me to separate still another clinical type of leukomain poisoning which I shall call, in conformity with the above nomenclature,

4. Leukomain Asthma.

This form of asthma presents very much the same clinical picture as ordinary bronchial asthma. The attacks, as a rule, come on during the early morning hours, and vary in severity from a simple to the most intense dyspnea. My impression is that this type of asthma is not uncommon, and that it goes to make up a not inconsiderable proportion of the asthmatic attacks which are classified under the comprehensive term, "bronchial asthma." However this may be, I am quite sure that the urine passed during certain of these asthmatic attacks contains a very great excess of paraxanthin and other leukomains of the uric acid group, and that the paraxanthin solution separated from the urine of these cases will, when injected into mice, produce intense dyspnea with the other symptoms of paraxanthin poisoning. The following case is offered as an example of leukomain asthma:

CASE.—A woman, aged sixty, of gouty inheritance and strong neurotic tendency, a number of her family have suffered from rheumatic gout, migraine, and asthma. She and a number of her family have an uncomfortable amount of adipose tissue. For three or four years this patient suffered, at times, from vertigo and shortness of breath without apparent cause. These symptoms could not with any certainty be traced to bodily exertion, nervous excitement, indigestion or any other exciting cause. On February 22, 1895, one of these attacks of dyspnea culminated in a very severe attack of asthma, which continued in paroxysms for five days. During this time a paroxysm of intense dyspnea would occur, as a rule, between 5 and 8 A.M. This paroxysm was at times alarming in its intensity, and would continue from one to three hours, but during the attack the heart's action would diminish after a fit of coughing, with the discharge of considerable quantities of bronchial mucus. The breathing would then get easier, but would remain somewhat embarrassed throughout the entire day, to be again exaggerated into a severe paroxysm the next morning. After the fifth day the patient had no paroxysms of dyspnea, and very soon thereafter commenced to be convalescent.

During March, April, and May, this patient had a number of asthmatic attacks of much less severity than the one described. Since that time (now almost a year) she has not had a single attack of dyspnea. I was very careful to assure myself that there was no heart or kidney lesion to account for the dyspnea. The urine passed during a severe asthmatic attack was acid, specific gravity 1024, no albumin, no casts, contained an excess of uric acid, and a large excess of paraxanthin and xanthin. From 1½ quarts of urine I separated both xanthin and paraxanthin. The paraxanthin solution separated from this urine was poisonous to mice, the mice dying with the characteristic symptoms of paraxanthin poisoning, one of which is severe *dyspnea*. One and one half quarts of urine passed by this patient in the interval between the attacks did not contain an appreciable quantity of paraxanthin.

Upon this evidence I conclude that paraxanthin was an important factor in producing the paroxysms of dyspnea from which this patient suffered. In this case, as in others that I have examined, I believe the symptoms were due to an overproduction rather than to a deficient elimination of paraxanthin. I emphasize this point, since it will appear later in this paper that I have reason to believe that the dyspnea (a uremic symptom) of acute and chronic Bright's disease is in part due to the deficient elimination of this same poisonous leukomain, which in very small quantities is one of the ingredients of normal

[1] Read before the Association of American Physicians, Washington, April 30, 1896.

urine. In this connection I wish also to express the opinion that the characteristic symptom in each of the four types of leukomain poisoning, which I have described, is produced by paraxanthin rather than by the less soluble and less poisonous leukomains associated with it in these diseases. That is to say, such symptoms as may be produced by xanthin and heteroxanthin are for the most part obscured by the paraxanthin poisoning. The characteristic headaches, the epileptoid convulsions, the gastralgia and the asthma may, therefore, very properly be called symptoms of paraxanthin poisoning.

From this phase of my subject I wish to pass to the study of the group of nervous symptoms so commonly associated with chronic alcoholism and chronic lead poisoning, since it is my belief that certain of the nervous symptoms, which occur in these conditions, are in part due to leukomain poisoning.

Chronic Alcoholism.—The importance of chronic alcoholism as a factor in the production of the gouty diathesis suggested to me the possibility that leukomain poisoning might be a factor in the production of the convulsive seizures which occur in chronic alcoholism, and also of the nervous symptoms which are grouped under the term "delirium tremens." Possessed with this idea, I attempted its solution by an examination of the urine of such patients. Some difficulty was experienced in obtaining suitable specimens of urine, as it had to be collected by catheterization, an operation which is at times attended with difficulty in these obstreporous and delerious patients. I did, however, succeed in getting three fairly representative specimens of delirium tremens urine, and from the examinations of these urines, I concluded that paraxanthin was a factor in producing the nervous symptoms from which chronic alcoholics so commonly suffer.

One of these cases, which occurred at the Cincinnati Hospital, in the service of Dr. George Fackler, is here given in detail. The urine was kindly collected by Dr. Shields, the resident physician.

No. 72,461, J. K., age thirty, teamster, an American, single, male, and of fair physique, was admitted to Cincinnati Hospital, November 18, 1895. Family history of phthisis, otherwise negative. He has hemorrhoids, denies venereal disease, but admits chronic alcoholism extending over a period of two years. He never had delirium tremens before, but recently he had been very nervous except when under the influence of liquor. He drank whiskey before breakfast to "settle his stomach and quiet his nerves." After a week of very hard drinking he was brought into the hospital suffering from delirium tremens. He was so unruly that it was necessary to strap him to the bed. In his delirium he was selling potatoes.

The physical examination, apart from the tremor, revealed nothing of importance, the urine was saved by catheterization. Patient was ordered bromid of potash grs. xxx, and hydrate of chloral grs. xx, every three hours, when awake. November 19th, slept some, is delirious when awake; 20th, slept all night, still delirious; 21st, slept well, no delirium; 25th, discharged well.

Examination of two quarts of urine excreted on November 18th and 19th, sp. gr. 1020, acid, yellow, no albumin. An excess of uric acid, and a small quantity of paraxanthin was found. The final fluid was evaporated to two cubic centimeters, and this fluid in large doses produced paraxanthin poisoning when injected into mice.

From a study of this and two other cases, I conclude that paraxanthin is present in excess in the urine passed by patients suffering from delirium tremens. In the light, therefore, of the known poisonous properties of paraxanthin, the inference seems fair that this leukomain is one of the factors which assist in producing the nervous symptoms of delirium tremens and the convulsive seizures of chronic alcoholics.

Lead Poisoning.—The fact that chronic lead poisoning may be the all important factor in the production of the gouty diathesis suggested the possibility that leukomain poisoning might be a factor in the production of lead encephalopathy and possibly others of the nervous symptoms of chronic lead poisoning. It is an interesting fact that the groups of nervous symptoms which may result from chronic lead poisoning and chronic alcoholism are very similar to the group of nervous symptoms which may occur in the gouty diathesis. The migraine, the epilepsy, the gastric neurosis, and the asthma, which are among the classical symptoms of so-called masked gout, and which I have demonstrated to be due to leukomain poisoning, have their analogues in the paroxysmal headaches, the epileptoid convulsions, the gastro-intestinal attacks, and the dyspnea, which not infrequently occur as symptoms of chronic lead poisoning and chronic alcoholism.

J. C. Wilson in his paper[1] on "Chronic Lead Poisoning," says "Naunyn has pointed out the resemblance between the nervous and psychical derangements in lead encephalopathy and those

[1] System of Medicine, Pepper, p. 1386.

which characterize chronic alcoholism, and suggests that lead, like alcohol, produces these effects, not as a direct poison, but indirectly in consequence of abnormal nutrition of the whole system, brought about by the continued circulation of a foreign poisonous material in the blood." It will presently be seen, in the light of my investigations, how strangely near the truth is this fortuitous suggestion of Naunyn, since my studies during the past year, the results of which I here present, have convinced me that the epileptoid convulsions, one of the most characteristic symptoms of lead encephalopathy, are due to the direct action on the nervous centers, of paraxanthin which exists in enormous excess in the urine of these cases. Only one case of well-marked lead encephalopathy occurred in the Cincinnati Hospital during the past year, and that case is here reported by the courtesy of Dr. Joseph Eichberg in whose service it occurred.

Case I.—A. S., German, 55 years old, of good physique, has been a lead worker for years, but has never had an attack of lead poisoning before. September 29, 1895, he was brought to the hospital in a semi-comatose condition which had followed an epileptiform convulsion. It was learned that he had been sick only two days, and that he had never had a convulsion prior to this one which caused him to be sent to the hospital. For some hours after entering the hospital he was slow to understand and answered questions in an incoherent way. His bowels were constipated, and his stomach irritable, temperature 97°, pulse 68, respirations 20. Patient has a blue line in the gums, a coarse tremor of the hands and a weakness of the extensor muscles of the forearms, tongue is coated but moist and shows marks of fresh laceration, evidently caused by the teeth in the convulsion previously mentioned. His abdomen is retracted, but he complains of no pain or tenderness in it. His heart, lungs, and spleen are normal.

Treatment.—Epsom salts ℥ i. every hour till bowels have moved freely. October 1. Slept well, temperature and pulse normal, mind has remained sluggish, bowels have been kept open with salts. October 2. At 6 P.M. he had an epileptoid convulsion; the muscular spasm was, in the beginning clonic, and afterward tonic.[1] He frothed at the mouth and lacerated his tongue during this convulsion which lasted three minutes. Violent delirium immediately followed the convulsion and continued till 8 P.M. He was given $\frac{1}{150}$ of a grain of hyosin, and 30 grains of bromid of potash. At 2 A.M. he went to sleep and slept till morning. The nurse was ordered to save the urine passed immediately following the convulsion. One quart in all was procured for examination. October 3; he is rational and calm this morning after his sleep, and answers questions fairly well. His bowels are constipated, his breath is foul, and there is slight tremor. He was given Epsom salts. October 6. Has been doing well, sleeps all night and complains of nothing except slight pain in bowels, probably from the salts, which have been given every day to keep the bowels open. Urinalysis: Urine yellow, sp. gr. 1020, acid, no albumin, no sugar, but lead reaction was well marked. (Previous to this time the urine had not been examined for lead). October 8, Patient feels well, sleeps good, has a fair appetite, there is a slight tremor present, and extensors of left hand are still weak. October 10. Patient doing well, ordered comp. tinct. of chinchona ℥ i. and tinct. nux vomica gtts. v. three times a day. October 20. Has not complained of anything during the past ten days, his bowels have been kept open, his appetite has been good, and he seems securely convalescent. During the past two days two and one half quarts of his urine were saved for examination, for the purpose of comparison with the urine passed just after the convulsion.

Examination of Urine.—Specimen No. 1. One quart of urine, passed after the convulsion of October 2d, contained lead and a large increase of uric acid, sp. gr. was 1024. It contained no albumin and no sugar, but the special purpose for which the urine was saved, was to determine the presence or absence in it of *xanthin* and *paraxanthin*. This urine was therefore examined for these bodies by the method set forth in my paper on "Leukomain Poisoning,"[1] and found to contain a trace of xanthin and a *considerable quantity of paraxanthin*. The great increase in the quantity of paraxanthin present in this urine can best be appreciated by remembering that nine liters of normal urine are necessary to demonstrate its presence (Salomon), while in this specimen, from one quart of pathological urine, paraxanthin was found in considerable quantities.[2]

Following the chemical tests I subjected the "final fluid" to the physiologic test for paraxan-

[1] I have arranged, but not otherwise changed these notes, which were taken by resident physician Dr. Robert Jones, who materially assisted me in obtaining the specimens of urine from this patient.

[1] "Transactions of Association of American Physicians," Vol. x, 1895, and *New York Medical Record*, June 22, 1895.

[2] The chemical tests which I use for determining the presence of xanthin and paraxanthin in the "final fluid" are as follows:

Xanthin I.—A drop or two of the suspected liquid and two drops of C. P. nitric acid are evaporated over an alcohol lamp, when xanthin is present a lemon-yellow residue is left. This is not changed by ammon. hydrate, but changes into a purple-red with potassium hydrate.

II.—A few drops of the suspected liquid are mixed with very little bleaching powder and sodium hydrate in a water glass. The solution becomes covered by a dark-green scum, which changes into brown and then disappears.

Paraxanthin I.—A few drops of a concentrated solution of potassium or sodium hydrate are added to a few drops of the suspected liquid; a white, glittering precipitate is formed if the suspected solution contained very much paraxanthin; if little paraxanthin is present the solution will be only cloudy, but will increase in cloudiness after standing awhile.

II.—A few drops of the suspected liquid are mixed with a little chlorine water, containing a trace of nitric acid and evaporated; when dry they are exposed to an ammoniacal atmosphere, if paraxanthin is present, a beautiful rose-red color is produced.

thin by injecting it into mice. In a very large number of examinations I have never failed to produce paraxanthin poisoning in the mouse, when the chemical examination showed that paraxanthin was present, and I have always failed to produce paraxanthin poisoning in the mouse with a "final fluid," in which the chemical examination said that there was no paraxanthin. For a detailed account of the symptoms of paraxanthin poisoning in the rat and mouse the reader is referred to a previous publication.[1] It will be sufficient here to say that the convulsion is one of the most striking and characteristic symptoms, and that in the beginning the convulsion is clonic and afterward becomes tonic or tetanic. It should here be noted, by reference to the note in the above history, made by the resident physician on October 2d, that the "epileptiform convulsion" which this patient had on that date, resembled a paraxanthin convulsion in the mouse; that is to say, it was "in the beginning clonic and afterward tonic." In the light of these facts the physiologic test of the "final fluid" from the urine of this patient assumes special importance. This test was made in the presence of Dr. F. Southgate and Mr. H. Wherry, who assisted me in making these observations. Three minims of the "final fluid" when injected into the back of a mouse, produced death in five minutes. The mouse died in convulsions, and the muscular movements were at first clonic and then tonic or tetanic.

There is yet one other important bit of evidence which must come in before one can pass judgment on the cause of the convulsion which this patient had on October 2d, and that is that in the specimen of urine (two and one half quarts) passed by this patient, during his convalescence, on October 19th and 20th, I failed to detect paraxanthin, and only a trace of xanthin was found. In my former papers I have noted the fact that an excess of paraxanthin in the urine means, that previous to its excretion, there was an excess of paraxanthin in the blood.

In view of all the facts above given it seems a rational conclusion that the convulsion which this patient had on October 2d was due to an excess of paraxanthin in his blood; this paraxanthin was excreted and found in excess in the urine passed immediately after the convulsion, and when separated from the urine produced the same kind of a convulsion in the mouse.

CASE II.—D. C., 35 years old, has been a lead worker for years and has had lead colic twice before. June 1, 1895: He was admitted to the Cincinnati Hospital suffering from lead poisoning. The blue line at margin of gums was well marked. Patient had a severe attack of lead colic which lasted twelve hours. Two quarts of urine, passed during and subsequent to the attack, were saved, and examined for xanthin and paraxanthin. June 5th. Man discharged well, he had only the one paroxysm of pain, and was convalescent the next day.

Examination of Urine.—Two quarts passed during and after an attack of lead colic contained *no paraxanthin* but contained *considerable xanthin.* The "final fluid" when injected into mice did not produce convulsions.

CASE III.—F. M., age 41, lead worker, was admitted to Cincinnati Hospital September 18th, and discharged September 21, 1895. During the three days he was in the hospital he suffered from lead colic, and was discharged "improved" at his own request. The attack of colic was not very severe, and was accompanied by arthralgia.

Examination of Urine.—Two quarts of urine failed to show the presence of paraxanthin, but xanthin was present in excess. The "final fluid" in small doses was not poisonous to mice.

In these urine examinations it will be noted that the patient who had "considerable" paraxanthin, had little xanthin in his urine, and that the patients who had "considerable" xanthin had no paraxanthin in their urine. This same observation was made in the examination of a number of urines of different kinds; very commonly when xanthin was found in excess, no paraxanthin was found, and it was also observed that the presence of paraxanthin in excess did not necessarily indicate an excess of xanthin. I may also remark in this connection that the presence of xanthin or paraxanthin in excess in the urine was not always associated with an excess of uric acid in the same urine.

Remarks on the Pathology of Lead Poisoning.—From the evidence given in this and in my previous papers, the conclusion I think is justified, that xanthin and paraxanthin plays an important rôle in the production of those nervous symptoms of chronic lead poisoning which can not be explained by degenerative changes in nerve tissue. Included in this group of functional symptoms may be mentioned amblyopia, headache, vertigo, neuralgia, colic, arthralgia, delirium, convulsions and temporary insanity. This group of nervous symptoms has never been satisfactorily explained by the pathological findings in chronic lead poisoning. Neither has any theory of this disease been comprehensive enough to furnish a rational explanation of these symptoms. One cannot understand how the direct action of lead on the

[1] MEDICAL NEWS, May 26, 1894.

nervous system can produce this group of symptoms, but one can understand how, in the perverted metabolism going on in degenerating muscles, nerves, and other tissues, not only uric acid, but also the closely allied uric acid leukamains, xanthin, paraxanthin, and heteroxanthin may be formed in such excess as to make them potent factors in the production of the above-named nervous symptoms. This theory founded, I think, for the most part on fact does not detract from the important rôle which the direct action of lead on tissues plays in the pathology of this disease. To the action of lead may be attributed the impaired nutrition and the degenerative changes in nerve and muscle tissue. In short, lead may be accused of producing all the morphological changes which are recognized as a part of the pathology of chronic lead poisoning, leaving to xanthin, paraxanthin, heteroxanthin and possibly other poisons of this class the production of the above-named nervous symptoms, which cannot be explained by structural changes.

In this connection it is impossible for me to resist the temptation of calling attention to the remarkable similarity which exists between the nervous symptoms of gout and the nervous symptoms of chronic lead poisoning, and of further noting the fact, that these two conditions have almost the same pathological anatomy. This may be taken as evidence that the one pathological factor—leukomain poisoning—which, as I have demonstrated, these two morbid conditions have in common, may possibly have something to do with the structural changes as well as with the nervous symptoms which occur in these two diseases. Concerning this question I shall have something to say in a later communication. I pass it for the present, that I may call your attention to another most important phase of autointoxication, viz.:

UREMIA.

In this, the closing paragraph of my paper, I shall not have time to discuss the broad subject of uremia. It is my purpose therefore, here merely to present a portion of the evidence which has convinced me that paraxanthin is a very important factor in producing the symptom conplex which we call uremia. In considering this subject, I would ask that the following statements be kept in mind.

1. Paraxanthin poisoning in the mouse is characterized by an increased reflex excitability which is followed by stupor, dyspnea, and convulsions. The convulsions are in the beginning clonic and then become tonic or tetanic.

2. In this and previous communications I have demonstrated that paraxanthin may be an important factor in producing the following symptoms, viz.: headache, gastric pain and gastric irritation, asthma and convulsions.

3. The most characteristic symptoms of uremia are headache, gastric irritation, dyspepsia, stupor, muscular twitchings and convulsions.

The above statements are here presented since their suggestiveness led me to inquire into the presence or absence of paraxanthin in the blood of uremic cases.

Case No. 66,104. Age 57, pedler, American, single, of good physique, was admitted to Cincinnati Hospital January 11, 1896, for soft chancre. He had syphilis nine years ago. At time of his admission to hospital he had diarrhea, a paroxysmal cough, edema of feet and a sore about the size of a dime on the under surface of prepuce. His urine contained albumin and casts. He remained in the surgical ward till February 21st when he was transferred to the medical ward service of Dr. J. C. Culbertson, because of well marked uremic symptoms, which had recently developed. At this time the edema was marked, the cough was paroxysmal, he was delirious and passed his urine involuntarily. His wild delirium gradually gave way to stupor, which on February 24th deepened into a semi-comatose condition. At this time 200 cc. of blood were removed from the patient's right arm, but no improvement followed this venisection. The uremic symptoms deepened and he died in uremic coma on February 25th.

Post-mortem examination, confirmed the diagnosis of death from uremia due to interstitial nephritis. Examination of the 100 cc. of blood which was obtained by venisection on February 24th, when the patient was in a semi-comatose condition, revealed the presence of paraxanthin, but not a trace of the other xanthin bodies. The paraxanthin solution obtained from the blood of this patient killed mice with the characteristic symptoms of paraxanthin poisoning.

I cannot be mistaken in the fact that paraxanthin was obtained from this blood. But there are other sources of error which must be investigated before paraxanthin can be justly accused of taking part in the production of the symptoms from which this patient suffered. In the first place we must inquire whether paraxanthin can be found in normal blood, when subjected to the same method by which paraxanthin is found in uremic blood. To answer this question, I examined 250 cc. of my own blood, which I obtained by venisection from my arm. In this blood I failed to find even a trace of the xanthin bodies. And I therefore concluded that paraxanthin did not exist in

appreciable quantities in normal blood, and that it was not developed in blood while being subjected to the process by which the xanthin bodies are isolated.

The second question to be inquired into, as a possible source of error, is, cannot paraxanthin be found in the blood of a patient dying from any disease? Or in other words, is it not possible that the paraxanthin may result from some abnormal body chemistry which shortly precedes death? In answer to this question, I examined the blood of a Cincinnati Hospital patient, No. 73,746, from the service of Dr. J. C. Mackenzie. This patient was admitted to the hospital on March 8, 1896, in a comatose condition. On March 10th, he was bled from the median veins in both arms. About 400 cc. of blood in all were taken. The patient died the next day, March 11th, and the *post-mortem* examination revealed the fact that he died from cerebral hemorrhage. In the 400 cc. of blood obtained from this patient, I failed to find paraxanthin. The type of unconsciousness in this case was very like that which occurred in the case of uremia above reported, but in one instance the coma was produced by uremia and in the other by cerebral hemorrhage.

In the light of these facts, therefore, I am of the opinion that paraxanthin is an important factor in producing that complexity of symptoms which we call uremia.

PULMONARY CONSUMPTION AS A FACTOR FOR THE ELIMINATION OF THE UNFIT.

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Pulmonary consumption is regarded by many as a scavenger whereby the weaklings and the unfit are removed, in order that the human race may be saved from decay and death; and all efforts at amelioration and cure are not only looked upon as a waste of time and money, but as a retardation of progress and civilization. This feeling has no doubt been fostered by the seemingly great and relentless fatality which has hitherto attended this disease. By some it is believed to be a dim memory which survives of a barbarous and half-civilized era, when it was considered necessary to abandon and to sacrifice the sick, the aged, and the infirm, for the sake of protecting the remainder of the social fabric. But whatever its source may be it is quite evident that this impression does not represent a very high degree of altruistic feeling, and that it is, in all probability, based on a misconception of the nature of the disease to which it relates.

This becomes quite manifest when we study the causes and conditions which originate this disease. From this we learn why so few families are exempt from its invasion, and why its victims, the number of which are nearly constant from one year to another, are selected with a certainty which is as startling as it is painful. Perhaps the most instructive lesson that can be drawn here is from the transmission of the tendency to this disease from parent to child. In estimating the potency of heredity we must take into account the fact that statisticians differ in their estimates, because they include various degrees of relationship. Thus when parental influence alone is considered the percentage is lower than if that of the whole family is embraced, and hence different authors make calculations which vary from thirty to seventy per cent. Moreover pulmonary consumption may be inherited from nervous diseases. Thus insanity, idiocy, hysteria, chorea, epilepsy, and asthma are translated into pulmonary disease between parents and children, and the latter is convertible into the former in the same way.

Here lies a most fertile source of pulmonary consumption, and one which has received very little attention from investigators. Dr. Blandford, a high authority on diseases of the mind, states[1] "I have found phthisis and insanity frequently coexisting in the same family." Dr. Stearns says:[2] "We often see a consumptive having a child which, instead of developing consumption develops insanity, and *vice versa*; insane parents may have children of a phthisical tendency." Dr. Mosher relates[3] the interesting history of a woman who suffered from lung disease and who had been insane for eight years, whose eight paternal great uncles and great aunts had died of phthisis, and whose paternal grandfather was epileptic. Dr. Clouston makes the observation[4] that the death rate from pulmonary consumption among the insane is four times higher than it is among the general population, that both diseases are very common in different members of the same family, and that heredity toward consumption may determine insanity, and that heredity toward the latter may produce the former disease. The same eminent authority makes the remark[5] that the form of insanity which is commonly associated with phthisis is monomania of suspicion

[1] "Insanity and Its Treatment," p. 56.
[2] *American Journal of Insanity*, 1888, p. 87.
[3] *New York Medical Record*, 1895, p. 390.
[4] "Neuroses of Development," p. 91.
[5] "Lectures on Mental Diseases," p. 461.

and melancholia; that nearly all pure cases of this kind sooner or later die from phthisis, and that the constitutional weakness which tends to end in insanity is akin to that which tends to end in phthisis.

There is a similar prevalence of consumption in families which are burdened with idiotic children. Thus it has been found that in one hundred families, taken at random from the general population, about eighteen members die from pulmonary consumption, but in one hundred families, each of which contain an idiotic or a hysterical child, the death-rate from this disease rises to nearly a hundred and fifty among its members—showing a mortality-rate about eight times greater than among the general population. Indeed the influence of heredity in transforming almost any nervous disease into pulmonary consumption, or the reverse is so obvious that it has not even escaped the eye of the lay writer. In the weird story of Dr. Pascal, Zola makes the latter acknowledge the fearful heredity which overhangs and threatens his life.

On the other hand, the poison of influenza and whooping-cough, alcohol, lead, mercury, etc., are powerful exciting causes of pulmonary consumption. Among lead-miners this disease is about three times more frequent than it is among the farming population of the same locality. The majority of those who are engaged in the manufacture of mercury, as mercury-miners, mirror-gilders, etc., die from pulmonary consumption. More than this, the offspring of those who suffer from mercury poisoning are exceedingly prone to suffer from this disease, as well as from rickets and scrofula. In fact, all evidence goes to show that any influence or agent which has the power of depressing or of disintegrating the brain and nervous system, as is the case with alcohol, lead, mercury, etc., also has the power of inciting pulmonary consumption and other forms of lung disease.

From what has been said so far, the impression may prevail that all consumptives belong to a degenerate class, and are hardly fit to survive the struggle for existence. The truth is, however, that the nature of very many of those who are in danger of dying from this disease, stamps them as individuals of the highest order of beauty and intelligence. They are excessively sensitive and nervous, and their intellectual and emotional faculties are often evolved to an extraordinary degree. Speaking of this peculiarity, Dr. Churchill says[1] that the connection between acute sensibility and phthisis is so striking that poets of all times and all countries have employed their most touching accents to deplore the premature fate of some of those victims to consumption whose youth was bright with promise of future excellence and distinction.

Where is the physician who has not seen a family of brilliant and beautiful boys and girls grow up one after the other, and to be then wiped out of existence at almost a single stroke from this deadly destroyer? How many parents are to-day lingering over the wasting and feverish frame of a dear son or daughter, whose cup of joy and happiness was running over, and whose life seemed to be radiating with every prospect of physical and spiritual greatness? Not only have poets sung of the beauty and grace of those who belong to the scrofulous or consumptive temperament, but men of science have been attracted by these characteristics, and have described them in the most felicitous language. For example, Professor Miller says:[1] "The complexion is fair, and frequently beautiful, as well as the features. The form, though delicate, is often graceful. The skin is thin, of fine texture, and subcutaneous blue veins are numerous, shining very delicately through the otherwise pearly-white integument. The pupils are usually spacious; and the eyeballs are not only large but prominent, and the eyelashes are long, and the sclerotic shows a lustrous whiteness."

It appears that high intelligence and physical beauty belong to a certain type of the phthisical temperament, and that in all probability both are the outcome of a refined nervous organization. A refined nervous system implies an unstable and a delicate constitution, not delicate in a morbid sense, but by reason of the exalted position which it has attained in the process of evolution, it is more sensitive to and more readily thrown out of balance by unfriendly influences with which it incidentally comes in contact. All persons who are endowed with such supersensitiveness of the nervous system are less fit to undergo the severe and exhaustive struggles, which are necessary to maintain life in the transitory stage of our still imperfect civilization, than those whose feelings and impressibilities are more obtuse. A transition, for example, from affluence to poverty, worry, grief, and physical and mental strain would simply mean disaster to many of the former class, and in many instances it would lead to the madhouse or to a phthisical grave; while a similar experience in the latter class would produce no more

[1] "Consumption and the Hypophosphites," p. 262.

[1] "Principles of Surgery," p. 55.

than a temporary superficial ruffle in their lives. The illustrious Laennec said[1] that among the causes of pulmonary consumption he knew of none more certain than grief or melancholy, above all, when prolonged.

It is well known, too, that phthisis is more liable to occur at one period of life than at another, and that in this respect it also runs a parallel course with insanity. More people die from phthisis and become insane between twenty and thirty years than during any other period in life. The cause for this is in all probability referable to the fact that at this point the brain and nervous system undergo a most varied and complex development. It is true that the weight and bulk of this organic structure matures during the first eighteen years of life, but its greatest and most intricate functional development takes place after this period. At this time man encounters a new experience in the way of living. He is forced to face problems of which he possesses very little knowledge, and on the solution of which depends his future comfort or misery. He is like an animal that is confronted by a new geological age to which it must adjust itself in order to prolong its existence. His new environment is, of course, not of the same character as that which surrounds the animal, but its power is just as real and as pressing. He is removed from paternal protection, and is left to struggle for himself. He becomes burdened with family cares and duties. He has to face a civilization with its education and inventions; its diverse manners and customs; its changeable institutions; its rankling politics; its innumerable arts and sciences; its multiplicity of industries and employments; its burning life-contests; its prejudices, jealousies, and disappointments; and its accompanying proneness to excesses and abuses of all sorts. The brunt of the battle principally falls on his brain and nervous system; and if these organs are sufficiently flexible to bring about and maintain a normal adjustment between himself and his new relation he will be successful, but, if from any acquired or inherited weakness or excessive delicacy, they prove inadequate he will go down in the struggle.

That many lives are lost in this process of attrition is attested by the statistics of consumption, insanity, and various other nervous diseases. And that those who are endowed with a highly developed nervous system are exceedingly liable to fall victims to the first-named disease, has already been shown; but the one problem of the most vital interest is whether this decimation is to continue indefinitely. Shall those who occupy a most exalted position in the evolutionary process be immolated forever on this altar? In answer to this it may be stated that the health reports of nearly all large cities of this country and of Europe show on the whole that the mortality from consumption is gradually diminishing. Not only is this the case since 1882, when the discovery of the tubercle bacillus led to the adoption of precautionary measures in many places, on account of the supposed contagiousness of this germ, but this has been true for at least seventy-five years in London; for seventy years in New York; for forty years in Boston; and for thirty years in Philadelphia. This reduction can be ascribed to nothing else than to a better mode of living. Better food, better clothing and shelter, better homes, better schools, better physical and mental training of the young, better streets, better drainage, less work for some and more for others, less poverty, less crime, elevation of the moral standard through Christian teaching, are the sanitary agencies which have brought about these changes, and which will eventually effect a harmonious relation between man and his environment.

Facts therefore fail to confirm the belief that pulmonary consumption is designed to purge society of the unfit; on the contrary, sufficient reason has been given to show that many of those who fall victims to this disease are drawn from a class of society which represents the most progressive type of human development. Evidence has also been submitted to show that general sanitation tends to eliminate this disease.

The future is therefore full of promising possibilities, but what of the present? Are those who are suffering from this disease doomed, and beyond the hope of restoration? Is medical science unable to hold out any prospect of immediate relief for them? If it is, then it is more impotent than nature herself, for the morgue and the *post-mortem* room furnish frequent proof of lung disease—old scars, the remnants of phthisis once active, but now gone—in the bodies of persons whose death was caused by accident, or by disease other than that of the pulmonary organs. Now if this much is done spontaneously and unassisted, art should do more. The art and science of medicine are doing more, as is amply attested by the records of hospitals specially devoted to the treatment of this disease, and by those of private practice.

[1] "Treatise on Mediate Auscultation," 1822.

CLINICAL MEMORANDUM.

SOME EXPERIENCES WITH THE BACTERIOLOGICAL DEPARTMENT OF THE PHILADELPHIA BOARD OF HEALTH.

By WILLIAM DUFFIELD ROBINSON, M.D.,
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THE following cases which have recently occurred in my practice illustrate some interesting and unexpected results of bacteriological examinations in cases of sore throat.

On December 7, I was called to see Mrs. G. M., wife of the paying teller of one of the banks of this city. She complained that she had taken cold, and for two or three days had felt chilly, with general bodily pains. She also said that she "had swallowed a piece of orange peel which had gotten behind her palate," that she was unable to dislodge it, and that it caused her distress. At the time of my visit the patient was in the dining-room, her little three-year-old girl being on her lap. I found the temperature to be 104⅕°, pulse 138, tongue coated, but on careful investigation could find no orange peel, nor other foreign substance in the locality indicated by the patient. There was, however, over both tonsils, and on the pharynx, quite an exudate, of whitish character, and not perceptibly elevated; it had not at all the appearance of "dirty chamois skin stuck on the parts," said to be characteristic of true diphtheria. The patient did not complain of soreness of the throat, and there were no nasal symptoms. A culture tube was procured, and specimens taken from the exudate were sent to the Bacteriological Department of the Board of Health. Treatment was then begun, consisting of tincture of chlorid of iron, and bichlorid of mercury, and sulphate of quinin, internally, and the throat was treated every two hours by being first cleaned with a hot gargle of weak salt water, then with a gargle of dilute peroxid of hydrogen, and by having trypsin freely blown on the affected parts after each treatment. The patient had been but little among outside people and knew of no exposure to diphtheritic poison. The case did not seem to present the characteristics of true diphtheria; but the husband and children were at once isolated pending the report of the bacteriological examination. This report, received the next day, stated that the culture contained Klebs-Löffler bacilli, and that the case was, therefore, one of true diphtheria. Cultures were then immediately made from the throats of the husband and of the three children, aged respectively three, seven, and nine years; and their strict isolation was continued. The report from these cases was that all the cultures, except from the youngest child, contained the Klebs-Löffler bacilli.

At this time each of these four persons was to all appearances, and by all tests that could be made as to pulse, temperature, condition of the throat, and general feeling, in perfect health. Nevertheless their isolation was still enforced in order to avoid contagion from the mother, they having been removed from the house as soon as the nature of her disease was ascertained. Detailed examination of each person was made each day and they all continued in apparently perfect health until the seventh day after the first culture of the exudate had been made, when the husband was taken with chill, followed by temperature 103⅘°, pulse 140, and rapidly developing exudate on pharynx, and right tonsil. The exudate had developed between the afternoon and my visit at 10 o'clock next morning, and practically covered one-half of the surface of the right tonsil and pharnyx. In the children the temperature and all the apparent conditions remained normal, and they were separated from their father by his returning to his home. Another culture was made from the father's throat and the Klebs-Löffler bacilli were again reported.

On the second day following, being the ninth day since the children had been separated from their mother, the boy, aged seven, and on the tenth day of their isolation, the girl, aged nine, almost identically reproduced the symptoms which had appeared in the father—chill, high temperature, throat exudate, with duplication of the report of Klebs-Löffler bacilli from the Bacteriological Department.

Briefly stating the treatment in these cases, I would say, that of Behring's antitoxin, No. 3—a full bottle was injected into the thigh of each patient. The activity of the disease was recognized about 10 A.M., and the injections were made about 3 P.M. of the same day. A marked improvement was manifested in each of these cases in twenty-four hours, the boy's throat having cleared, and the temperature in no case being higher than 99⅖°. At the end of forty-eight hours each of these patients was practically well, with normal temperature, and clean throat, simply showing a little redness, which passed away within the next twenty-four hours. The bacilli continued to be found for the next four or five days in the boy; for ten days in the girl, and for fifteen days after the disappearance of the exudate, in the father's case.

The three-year-old child, although much more exposed to the contagion of her mother's breath than any of the other members of the family, from having slept with her, remained perfectly well, was returned to her home after its disinfection, now more than three weeks ago, and has had no diseased symptoms, nor has bacteriological examination discovered any diphtheritic bacilli in her case. Repeated examinations of the throat of the nurse, who had charge of these cases, failed to show any trace of the bacilli, and she left the house in perfect health.

Any physician can readily appreciate how difficult it was to keep this gentleman away from his business while he was feeling in such perfect health during the week of incubation and the two weeks following his apparent recovery, while the baccilli continued to be found. Epecially was this the case because there were only about three days during the activity of the disease that he experienced even a slight indisposition. It is also manifest what a terrible source for the distribution of contagion he would have been in his position as paying teller, handing money to hundreds of persons daily, with fingers often moistened with saliva laden with disease-bearing germs.

These cases illustrate, from the positive side, the value of bacteriological examination in cases of sore throat, even where diphtheria may be not at all suspected, showing, as

they do, how this process can detect the presence of the disease even where there are no other indications of its existence, nor, indeed, of any ailment whatever.

The next case may be regarded as of a negative character, showing how the bacteriological examination contraindicated the presence of diphtheria in a case where all the symptoms and circumstances seemed to affirm its presence, and how the accuracy and trustworthiness of the bacteriological method were demonstrated by the results.

Mrs. G., the mother of two children, one aged fifteen months, and the other four years, called me in. I found a history of chill, temperature 104⅕°, pulse 136, glassy eyes, and every indication of toxemia. An examination of the pharnyx revealed an exudate similar to that described as characteritic of diphtheria. It was in color a dirty-looking, yellowish white, and appeared as if the spots had been pasted upon the pharnyx and tonsils, covering one-third of all the parts visible back of the soft palate by compression of the tongue. A week previous to the beginning of her illness the patient had attended the funeral of a child who had died of diphtheria, the diagnosis in that case having been confirmed by bacteriological examination. Subsequently to the child's death, two dolls which had belonged to her were sent to patient for the amusement of her children. One of these dolls was much soiled, and had been much handled by the dead child during her last illness. Patient had handled the dolls herself a good deal to amuse her children, and the history of the case, therefore, gave excellent reason for suspecting contagion. On the first day a culture was made from her throat, before any antiseptic remedies had been used, and was sent to the Bacteriological Department for examination. Feeling confident that all the symptoms and the history of the case proved it one of true diphtheria, I began active, local and constitutional treatment, withholding, however, the antitoxin until I should have received the report of the results of the bacteriological examination. In order to get this report as soon as possible, I had arranged with the examiner that it be sent me by special messenger immediately on completion of the examination. It was received about noon, and, to my surprise, it was to the effect that the examiner had been unable to find any Klebs-Loffler bacilli, and that the department, therefore, could not, from a bacteriological standpoint, pronounce the case one of true diphtheria. They, however, requested that another culture be made, and that the case be carefully isolated, pending a repetition of the examination. This second and a third closley consecutive examination still failed to show the presence of the characteritic bacilli; and no antitoxin was injected. The woman entirely recovered in a few days, and the children have remained free from the slightest illness now for more than four weeks since their mother's recovery.

The next case is of a different class, but is pertinent in this connection as showing the accuracy of the bacteriological method, and its value in sometimes revealing the existence of a disease whose presence there are no other grounds for suspecting.

G. B., male, aged thirty-four, by profession a vocal musician; never of very vigorous health, and with a history of having had pneumonia six years and two years ago; was, after two years of good health, taken with a chill, very high temperature, rapid breathing, and great pain in lower part of left lung, apparently pleuritic in character, extending in modified form over much of the lung. Within twenty-four hours he began to spit, after coughing, a clear, colorless, tenacious substance, roughly mixed with a substance like freshly clotted blood. There was some dulness over the affected side on light percussion, with harsh bronchial breathing. In a modified degree the same condition prevailed in the other lung. The case was diagnosed as probably one of pneumonia rapidly progressing, and a specimen of sputum was immediately sent to the Bateriological Department to confirm, if possible, this diagnosis by the detection of the pneumococci, the characteristic micro-organism of pneumonia. The report was that no pneumococci had been found in the sputum, but that many tubercle bacilli had been discovered. The examination was repeated, with the same results. As the young man had not been ill for two years, and there had been no evidence of reduced physical vigor previous to his acute attack, this report was indeed surprising, and especially so in view of the acute symptoms then present. It was but eight or ten days, however, before the correctness of the bacteriological diagnosis was proven by the unmistakable evidences of an unusually rapid form of miliary tuberculosis, from which the patient has sunk with remarkable rapidity. At the present writing (five weeks since the first bacteriological examination of his sputum) he is practically moribund, it seeming impossible that he can live beyond twenty-four to forty-eight hours. The evidences of the ravages of the tubercular process have been characteristic and very plain.

MEDICAL PROGRESS.

Vagitus Uterinus.—Flatau (*Centralblatt für Gynäkologie*, 1896, No. 11, p. 293) has reported a case of a quartipara, at the normal end of an uncomplicated pregnancy, in whom the onset of labor was marked by copious hemorrhage. Placenta prævia lateralis was diagnosticated and, in the hope that the head would descend and act as a tampon, the membranes were ruptured through the partially dilated os uteri. The anticipated result was not realized, and a tampon of iodoform gauze became necessary. The hemorrhage, however, persisted, and podalic version was performed. With the outer hand grasping the head, an attempt was made with two fingers introduced into the uterus to bring the feet together. In the performance of this act the umbilical cord was compressed and at once cries were heard. These were repeated when the cord was again compressed. Version was finally effected successfully, and the child at once extracted. The infant was asphyxiated, but was resuscitated by mechanical irritation of the precordium. The explanation offered for the phenomenon observed is, that air was introduced into the uterus with the hand, and that compression of the cord induced dyspnea, with the resulting cry on the part of the fetus.

The Medical News.

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SATURDAY, MAY 16, 1896.

THE AMERICAN MEDICAL ASSOCIATION.

The recent meeting in Atlanta met the expectations of those who attended it as fully as could be reasonably expected, considering the location —in a Southern city—at this season of the year. The number in attendance, although not quite up to the average, was sufficient to afford an inspiring audience, not only in the general sessions, but also in the various sections.

The difficulties in handling the business details of so large a meeting were ably mastered by the president, Dr. Beverley Cole; indeed, it is rare that the presiding officer shows so much tact in preserving the good nature of antagonists, while deciding promptly and positively the many points in numerous delicate and sensitive questions that arise.

The autocratic way in which those in authority ignored the memorial exercises ordered, by vote of the Society at a previous meeting, in recognition of the centennial of Jenner and his great discovery was endured with great forbearance. At the same time, it was no less a mark of disrespect to the eminent men who had been invited to participate in these particular exercises. And the vigor with which the friends of the movement insisted on being heard enabled the Association to lead in the celebration of an event which will be the occasion of many celebrations in less conspicuous societies throughout the year.

In regard to the scientific work, the exercises were made memorable by the addresses of Osler, in general medicine, and Senn, in surgery. Both these men, while holding high the standard of scientific medicine, laid bare many shortcomings in its practice, and dealt rebuke with unstinted hand to those of the profession who abuse their privileges, either by neglect or by misdirected ambition.

The value of these meetings of the American Medical Association, in certain respects, cannot be overestimated. The objection, often advanced, that they afford opportunity for men, incompetent to speak with authority upon any subject, to air their views and consume valuable time may be answered by the cogent consideration that this is, likewise, just the opportunity to explode the false conceptions thus promulgated. The faddist who claims that typhoid fever can be aborted in five to seven days, and, in a vein of over-confidence, nonchalantly announces that "any physician who loses a case is criminally guilty of malpractice," suddenly finds that he has exploded a bomb, whose reactionary force is apt to set him thinking. And when a sober provincial, in a highly moral paper, advances the claim that small doses of alcohol, ranging from fifteen drops to two drams, dilate the capillaries and act as a heart depressant, is told that sentimental reasons cannot controvert carefully observed physiological facts, he, as well as others like him, is apt to go home a wiser though perhaps a sadder man.

The social functions attendant upon the meeting fully realized the hospitable greetings of the welcoming addresses. All the details of the barbecue were carried out with so much system that it lacked entirely the tiresome features so often a part of such a performance. The lovely day, the delightful grove, the attractive tables, reaching out their long length in the shade of the spreading trees, all combined to make a picture that will not soon be forgotten by him who had the pleasure of enjoying it.

RECENT ADVANCE IN GYNECOLOGY.

THE TREATMENT OF PUS IN THE FEMALE PELVIS.

Even a comparatively short experience in the practice of medicine will have sufficed to enable one to see great changes in the treatment of suppurative pelvic diseases of women. The opinions of learned and careful men have undergone almost revolutionary changes within the past five years, due more especially to improved methods of sterilization, and more careful anatomical study. Procedures which, a few years ago, seemed beyond hope of successful application are now commonly employed. Greater precision in the classification and analysis of cases has made it possible to formulate definite rules of action, and from the careful assignment of each case to its proper class sounder generalizations have been reached.

We may safely divide all cases of pelvic suppuration into two great groups: (*a*) Abscess of the ovary or of the tube, where the pus remains, contained within the walls of the diseased viscus; and (*b*) cases of diffuse pelvic suppuration, in which the pus has escaped from its original seat and has forced its way between coils of intestine and plates of lymph effusion. In this latter class must be included true broad ligament phlegmon.

The treatment of unilateral disease, including ovarian abscess and pyosalpinx, seems a simple problem. But here we find opinion diametrically opposed. Most American surgeons prefer the clean, straight abdominal incision, the removal of the diseased adnexa and closure of the abdomen without drainage. But in certain quarters the vaginal route is given precedence, some preferring to make the incision anterior to the cervix uteri and others giving preference to the incision into Douglas' pouch. It would seem that the traumatism attendant upon the anterior incision is greater than that incident to an abdominal section and is devoid of the attractiveness which attaches to open work where every step is seen. Of the abdominal route it may be said that every phase and variation is well known through long experience; that every possible complication has been met and the method of dealing with it is known, and, above all, that the probablity of entering a hollow viscus is so slight that it may be omitted from our calculations. Although we can fairly well cleanse the vagina by means of preliminary antiseptic tampons, curettage, and brushes, still must this cavity be classed among the hollow viscera, an entrance into which is undesirable.

Furthermore, all who have attempted vaginal section for unilateral disease must admit that the traumatism of the genitalia is less with celiotomy, that a more elaborate differentiation of conservative work can be applied through the abdomen and that the mortality from celiotomy in this class of cases is practically *nil*. To-day, at least, those who seek removal of *unilateral* purulent adnexa through the vagina are not supported either by experience or force of argument. The weight of both are with him who does celiotomy.

The treatment of *bilateral* suppurative disease also finds advocates for both the suprapubic and vaginal routes, furthermore we are all confronted here with the question of the advisability of removing the uterus. If the surgeon be one who leaves the uterus after he removes both adnexa, he will elect the abdominal route undoubtedly. But if he belongs to the camp of those who always remove the uterus when both adnexa are taken away for pus, and who never remove the adnexa unless the seat of purulent degeneration. he has presented to him two lines of precedure, the result of which immediately are the same and remotely identical. The abdominal route leaves a scar as an ever-present reminder of a grave operation, and there is a breach in the abdominal parieties with a remote chance of subsequent hernia through it. These are absolutely the only objections to the abdominal route.

There is little risk of wounding the bladder or bowels in the operation, and what damage is done to either can be easily repaired. The ligation of the vessels can be made either *en masse* or in continuity, and there is no secondary hemorrhage to be feared. The vaginal route is much the more difficult. Accidents of the hollow viscera occur in a too considerable percentage of cases; ligation of vessels in continuity is never possible; ligation *en masse* seldom practicable. The arteries are better secured by means of forceps, which produce nasty sloughs. There is no disagreeable abdominal scar, there is no possibility of ventral hernia; the discomfort immediately after the operation is about the same as after laparo-

tomy; but undoubtedly the general shock is less. How is the surgeon to decide between these two nearly equally attractive methods? Nowadays the patient will often demand vaginal operation. This is especially true in our large cities, where some operators take their patients into their confidence as to the beauty of the vaginal method and the disadvantages of the other. There are fashions in surgery as well as in dress. But a careful consideration of the possibilities of each procedure, its ultimate results, the accidents attending it, will lead the man who is unhampered by extraneous matters to elect the abdomen rather than the vagina as the place of his incision. In considering this statement the reader must bear in mind that reference is made to the class of cases which are designated as bilateral, but in which the pus has not escaped from the wall of the affected viscera. When we come to consider those complicated cases of *diffuse* pelvic suppuration all hope of local conservatism is abandoned and that broader conservatism alone is to be considered which seeks the preservation of the general economy.

When such a condition is approached from below, very often the uterus only can be removed, the ovaries and tubes being so firmly attached and so high up as to be beyond the reach of the operator for removal. The vaginal operation is then surgically incomplete, although the pus foci can be opened widely and a large pelvic Mickulicz tampon employed. Even though such an incomplete operation be done, it is an open question whether the results, both immediate and ultimate, are not better than those resulting from a complete abdominal section which necessitates the use of Mickulicz tampons. In America at least, very often a suppurating appendicitis is associated with pus tubes and not infrequently there are fistulous openings into the intestine above the pelvic brim. These cases are to be considered as demanding celiotomy rather than vaginal section; for the intestinal lesion is of paramount importance and requires a careful manipulation. By vaginal section, in some cases, such a condition can be discovered but in very many it cannot. It is to be found in all cases where the pus foci on the right side are attached at the pelvic brim.

But there is another side to this question of the treatment of pus in the pelvis; the woman's side. No man who has watched his cases can deny that most unfortunate is the woman whose menses have been stopped before she is thirty years old. Too often is her neurasthenia and melancholia painfully in evidence. The greater her intelligence and refinement, the more active her mind, the more distressed is she. The women of lower cast, who have hard manual labor to perform, suffer mentally less. So that, in certain cases, especially in young women, many surgeons content themselves with widely opening the cul-de-sac, emptying the pus sacs and packing them with iodoform gauze. This procedure must not be confounded with the blind vaginal puncture. The object sought is the obliteration of the pus sacs, but the preservation to the woman of her menstrual functions free from genital atrophy and the distress of a premature menopause. So deeply averse are some surgeons, men fully capable to do any required work, to the mutilation of women that they always lay before those afflicted in this way the possibilities of the cul-de-sac drain.

This whole subject may be summarized in this way: In diffuse pelvic suppuration, hysterectomy, is always indicated, because drainage behind the uterus will be insufficient. In simple bilateral tubo-ovarian suppuration, the cul-de-sac incision and a large pelvic Mikulicz tamponade of iodoform gauze into the opened pus sacs, will symptomatically cure the vast majority of cases. If it fails to cure, relief is temporarily afforded and a radical operation can be done at the *elective time*. The possibility of the latter is the glory of the vaginal section. Surgeons are to consider whether it is not their imperative duty to first apply this procedure, which so often cures and which always benefits; which carries with it no accidents, and which preserves to the woman her menstrual functions.

William R. Pryor, M.D.

ECHOES AND NEWS.

The New York Orthopedic Dispensary and Hospital has recently received gifts amounting to more than $50,000.

Dr. Charles A. L. Reed of Cincinnati, has been selected by the European committee on organization of the International Periodical Congress of Gynecology an

Obstetrics, as honorary president of the meeting of that body, to be held in the city of Geneva, Switzerland, the first week in September of this year.

THE ILLINOIS STATE BOARD OF HEALTH have decided to recognize the diplomas from no medical college that does not exact a four years' course. Thus all of her colleges have been forced to adopt this plan, but it should be stated to their credit that many of them had adopted this rule in advance of the present demands from the State authorities. The reciprocal recognition of medical diplomas already exists between Illinois and several foreign countries.

IN an elaborate study of statistics furnished by the London primary schools relative to their influence in the spread of diphtheria Dr. Smith concludes that this danger has been greatly overestimated. He regards the relations existing in them as far less important in its propagation than the habit of kissing among girls and the crowding together of children in their homes.

THE Brooklyn Centennial Festival in honor of Jenner, to be held on the 14th inst., will be attended by the following distinguished medical guests: Drs. William Pepper, of the University of Pennsylvania and William H. Welch of the Johns Hopkins; also by the Right Rev. Bishop Potter and Hon. St. Clair McKelway, Regent of the University and editor of the *Brooklyn Eagle*. A bronze metal has been prepared for presentation to each of the guests.

THE trustees of the Jefferson Hospital, Philadelphia, at their meeting on the 7th instant, accepted the resignation of Professor James F. Wilson as medical director, with great regret. Professor Wilson will still remain a member of the board. Dr. Joseph S. Neff was elected to fill the vacancy, and Charles Hebard of Chestnut Hill, was elected to the Board of Trustees.

LAST week five children were reported to have been born to a Kentucky couple at a single confinement and this week the enterprise of a woman of Fowler, Ind. who gave birth to six living children at one confinement requires notice.

IN the death of Baron Hirsch many charitable institutions in Europe have lost a liberal benefactor. It is stated that London charities especially will suffer, for to them he was a most munificent patron. In 1893 they were indebted to him for not less than £40,000.

THE arch anti-vaccination agitator at Gloucester, England has finally caused himself to be vaccinated, for the public good but against his convictions, he rather lamely explains.

THE *Sanitary Record*, April 24th, reports that at Neath, South Wales, two brothers named Edwards have died by variola. Their father had the disease about five weeks ago. Both the brothers were, three weeks ago, proffered vaccination but they refused. Each of them said that he would rather die than submit to the operation. The wife of one of the brothers was recently confined, and both she and her infant have taken the disease and have been removed to the hospital.

THE German Parliament on March 12th discussed a motion brought forward by Herr Foerster, a Socialist-Democrat, for the abolition of compulsory vaccination. Dr. Von Boettischer, Secretary of State, said that the Federal Council had by an overwhelming majority expressed itself in favor of maintaining the present law. The motion of Herr Foerster was then promptly negatived and compulsory vaccination is still the rule of the realm.

IN the *British Medical Journal* of February 8th, Dr. George R. Murray, who first instituted the treatment of myxedema by thyroid feeding, gives a further report of his first case. The patient was a woman, aged forty-six, who had had myxedema for four or five years. Treatment was begun in 1891, and has been continued ever since. The patient is still perfectly well.

THE Paris correspondent of the *British Medical Journal* writes that it has been proposed in the Chamber of Deputies that from the unreclaimed sums of savings banks and other deposit sums to the amount of £10,000 should be paid to the different French laboratories: £2600 to the Pasteur Institute and to the laboratories of higher education in Paris, including the Val-de-Grâce Hospital laboratory and the Alfort School of Veterinary Medicine, for the purpose of aiding researches on contagious diseases, especially those in connection with serums and vaccines; £5000 to the medical school laboratories of Lyons, Bordeaux, Montpellier, Toulouse, Lille, and Nancy, likewise to the veterinary schools of Lyons and Toulouse; also for the purposes of experimental research for contagious maladies, including the further study of serums and vaccines; and £2400 to the therapeutical, pharmacological, and medical chemistry laboratories of the medical faculties and pharmaceutical schools to be devoted to the study of the methods of treating contagious diseases, likewise of the drugs. Every year reports of the work done at these establishment, are to be sent to the Minister of Public Instruction. The minister will afterward send them either to the Academy of Sciences or Academy of Medicine.

A PROMINENT New York neurologist was recently under the fire of a cross-examination in a case where the plea of insanity was urged. This witness testified that the accused was not insane, and would not admit that the hereditary taint of insanity in a family would predispose a person to such attacks. The following were some of the thrusts and parries:

Q. Is not hereditary insanity a common cause of attacks among people?

A. It is not so much believed now as it was. The opinions have been modified.

Q. You say that in your book, from which I am reading?

A. That doesn't change my mind.

Q. Then doctors change their mind?

A. The same as lawyers,

Q. Is your book an authority?

A. That's for you to say.
Q. Well, what do you say?
A. Well, I have my doubts.

One of the New York dailies pertinently observes that "At present the signs forbidding smoking on the elevated railroad platforms serve no good purpose whatever. If only they were roughened with a coating of sand they would be useful for smokers to strike matches on." To which we would add that the printed legends issued by the New York Board of Health, relating to expectoration upon the cars and other public places are apparently held in thorough contempt by both the corporations and the public. A law uninforced is better rescinded, and unless these signs can be made to command more respect from people persistently indecent, as well as ignorant, they should be removed without delay.

There is said to be trouble in the Woman's Medical College of Philadelphia. The students recently made a formal complaint of the lack of clinical advantages which they had been led to expect, and the entire staff of internes, with Dr. Anna M. Fullerton, physician-in-charge, have tendered their resignations.

Dr. Judson Daland of Philadelphia, has been appointed professor of diseases of the chest at the Philadelphia Polyclinic Hospital.

Grave fears are said to be entertained by the sanitary authorities of both Cairo and Alexandria of an epidemic of cholera in Egypt in the near future. In the former place all efforts made to stamp out the disease during the past winter have been ineffectual. Nineteen new cases and twenty deaths were reported in one day in Alexandria and it is feared that the canal from which her water supply is drawn has been polluted. The natives conceal the cases whenever possible.

The battle at Krügersdorp between the Boers and Dr. Jameson's troopers has revived the discussion of gunshot wounds from modern rifles. More than forty patients, all of them suffering from bullet wounds, were received in hospitals after the engagement, and the *British Medical Journal* has received a detailed report of the nature of the injuries and after-effects. It seems that the wounds made by the Lee-Metford rifle were cleaner and healed more quickly than those produced by other weapons. Many of the shots, through fleshy parts only, healed almost by first intention. One burgher, shot through the lungs, left the hospital a few days after admission convalescent. The entrance orifice of the bullet was exceedingly small, and few of the larger vessels having been divided, the hemorrhage was, in consequence, slight, the wound closed almost immediately on itself. The exit was about the size of the entrance, and in all cases was much smaller than that made by the Martini rifle. Where the Lee-Metford bullets struck bone this was completely shattered. The flesh wounds inflicted by the Martini rifle were of a much more serious nature—namely, larger, jagged, slow in healing, with bad apertures of entrance and worse of exit. The majority of Jameson's men had limb wounds. Among the more severely wounded burghers there was one man shot through the head who lived ten days afterward, one shot through the abdomen, one through the lung, one through hand and lung, and one through the back. The general consensus of opinion among those who saw the effects of fighting in South Africa is that the Lee-Metford rifle or carbine is inferior to the Martini as a "man-slaying" weapon. It does not appear to have in many cases the power which it should possess of putting a man *hors de combat*.

The *Philadelphia Press* has information that the literary exploits of Dr. A. J. C. Skene of Brooklyn, are presently to be tried in the field of fiction. With every minute of his time exactingly filled, it is said he is still to find more time—his own, or somebody's else—to create a story having psychological problems in it, like Dr. Holmes' Elsie Venner, or like Dr. Weir Mitchell's latest.

The rational and encouraging vien in which Dr. Philip C. Knapp of Boston, in the current number of the *Century* treats the question "Are Nervous Diseases Increasing?" goes far toward mitigating the offense of presenting medical subjects in popular magazines. In this article it is asserted with all the authority that can be drawn from as yet incomplete statistics, that the increase in the relative number of insane among the more highly civilized nations is more apparent than real. This is owing to a number of reasons, the chief of which are the change of view entertained toward insanity and its treatment by society, who now look upon it as a disease and not a disgrace; and the present facilities for its better and more frequent detection. Dr. Knapp also shows that, although Americans are more restless—or rather more active—than other nations, they are not more prone to nervous maladies. The so-called American disease, neurasthenia, constituted only ten or eleven per cent. of all nervous cases presented at the clinics of several American charities, whereas, in Paris twelve per cent. are so classified. Moreover, a large number of the cases treated in America are among our imported population. In the matter of hysteria, its percentage in Europe is several times greater than obtains in America. The relation of nervous disorders to, and their dependence upon other physical defects, either inherited or accidentally acquired, is duly emphasized, after which it is proven that, as a race, we compare favorably in almost every particular with any other, and are hence not more liable to nervous disease, a fact which is borne out by the mortality tables of life insurance companies, as well as other sources of reliable information. The increasing vigor and self-reliance of our women has banished much of the semi-affected nervous vagaries of the past and replaced them by an admirable power of resistance and self-control. With a better understanding of their causes and a daily improvement in scientific methods for their prevention and control, it is concluded that nervous diseases are not increasing, but on the contrary, the natural inference may be drawn that they should be expected to diminish.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., May 5, 6, 7, and 8, 1896.

(Continued.)

Second Day—May 6th.

Section on Surgery and Anatomy.

Dr. H. H. Beach, Boston, Mass., presented the first paper upon

EXPLORATION AND TREATMENT OF FISSURES FROM SKULL FRACTURES.

The author claimed that fatal results which attend fracture of the skull when not due to the immediate destructive violence of the injury may be attributed to septic infection by the extension of the fracture into the oral or nasal cavities.

As possibilities of infection cannot be estimated before the development of unfavorable symptoms, when too late to institute antiseptic measures, however radical, conservative treatment should include at the first inspection of the wound, a most rigid asepsis, the exploration of fissures with the *utmost* precision, uncovering the whole circumference of the perforation in the skull for that purpose and providing unlimited drainage by widening the fissure into loosely connected bone that extends in the direction of the base. Since nearly fifty per cent. of brain abscesses originate in suppurative ear diseases, the isolation of this region from the brain and its attachments during the repairs of a fractured skull demands the serious consideration of the surgeon. It also suggests the question of a more radical clearing and asepsis of the ear cavities than can be obtained without anesthesia in cases where the temperature steadily rises, notwithstanding our precautions. The danger associated with such a plan lies in the possibility of forcing, by washing under pressure, septic material through a wide fissure into the skull-cavity, and emphasizes the importance of a competent primary asepsis of the ears in all fractures connected with them.

Cases were added illustrating the practice advocated.

Dr. J. C. Oliver of Cincinnati, presented

A REPORT OF FOUR CASES REPRESENTING INJURIES AND OPERATIONS UPON THE BRAIN.

Case I.—That of a man aged fifty-nine, who fell through a dust chute, striking upon his head. He presented ptosis on the left side, hemorrhage from the left nostril, motor aphasia, and the pupils were midway between contraction and dilatation, and did not react to light. There was no paralysis of the limbs, nor of the face. The autopsy showed that the symptoms were each dependent upon separate lesions. There was found rupture of the middle meningeal artery on the left side, a fracture of the left orbital plate, and also a distinct, separate fracture of the cribiform plate on the left side.

Case II.—A patient presenting Jacksonian epilepsy, the convulsion always beginning in the left leg then involving the left arm, the left side of the face, and then becoming general. Following the convulsion the patient would have left-sided paresis which would only remain for a few hours. After the attack he would become maniacal, in which condition he was dangerous to those about him. The convulsions in this case occurred in groups so that he would have ten or fifteen a day. Because of the symptoms, trephining was done over the leg center on the right side of the brain. A varicose vein in the diploe was found to have ulcerated through the internal and external plates of the skull and had also caused absorption of the dura mater at one point. At this point there was a small hernia or protrusion of the pia and brain. No other lesion was discovered. The course of the vein was bitten out with rongeur forceps and the channel in the diploe plugged with a sterilized match. Following the operation the patient was free from epilepsy for six months. After this he began to experience pain in his left leg and there was a gradual return of the convulsions. Believing that the return of the convulsions was dependent upon the adhesions which had formed, the patient was again operated upon nine months after the first operation and a plate of gold foil inserted in the deficiency in the skull. A few months subsequently, the patient died suddenly in the night from causes unknown. Subsequent to the operation he experienced no convulsions. An examination of the head after death showed no gross lesion of the brain. The gold plate had very effectually accomplished the purpose for which it was inserted.

Case III.—The patient in this case had an inflammatory condition in the left upper eyelid which went on to suppuration. This was opened and the patient returned to his occupation, that of a machinist. After being at work for about three weeks, he began suffering with pain in the head which was most marked over the left frontal region. He became stupid. On testing the vision it was found to be 20–70 in each eye. A choked disk was present in the left fundus. A paresis involving the right side was found to exist. The deep reflexes were normal. Temperature was slightly subnormal, the pulse was irregular and hard. The diagnosis of cerebral abscess of the left frontal lobe was made, and a trephining over this area and exploration of the brain in this region led to the evacuation of an abscess containing three ounces of pus. The patient recovered and is now in his usual condition of mind and body.

Case IV.—In July, 1895, the patient was treated for an acute otitis media. This condition persisted in spite of treatment. On the 13th of October the patient was found comatose, pulse about 90, pupils contracted, slightly reacting to light, Cheyne-Stokes respiration. This condition continued until the following morning, when he was removed to the Cincinnati Hospital. That evening his temperature was 103, he was delerious, pulse was rapid, he had divergent strabismus, no evident facial paralysis, pulse 132, respirations 26. He became very restless and had to be restrained. The reflexes were present and active; slight trismus was noticed. In view of the fact that these symptoms followed the ear trouble, and also in view of the very evident meningitis, it was deemed advisable to trephine over the temporo-sphenoidal lobe for pos-

sible abscess. This was done with a negative result. The left lobe of the cerebellum was then opened with likewise a negative result. The patient died within an hour after the operation. *Post-mortem* showed diffuse purulent meningitis involving both the base and the convexity. There was no localized accumulation of pus. The infection in this case followed along the carotid canal.

Dr. Ransohoff of Cincinnati, in discussing Dr. Oliver's paper, said: I would simply like to refer to the question of hemorrhage in these operations, and to mention a method which I have employed to overcome it. I introduce, about an inch from the surface of the tumor, a continuous chain suture, which I draw tight around the entire line of the incision. This can be done very rapidly, and the entire area of the skull is thus made absolutely bloodless. I make my incision within the line of the chain, and have never found that the introduction of this suture interfered in the least with the vitality of the flap.

CHOLELITHIASIS AND CHOLELITHOTOMY,

by Dr. Chas. H. Dunn, Minneapolis.

This paper was based upon a study of forty cases of gall-stone disease and a review of the chief literature upon the subject. In the author's opinion the indication for the operation of cholelithotomy were relative and imperative. If the attacks of biliary colic be frequent, the calculi not passed and the symptoms not relieved by a reasonable hygienic and medical course of a few weeks duration so safe an operation as cholecystotomy is doubly preferable to further delay, even though no very threatening symptoms have developed, first, as the cheapest escape from present suffering, and second, as a preventive measure against the ever possible dangers of cholangioitis, duct impactions, etc., which may entail a much more dangerous and trying operation upon the patient. With few exceptions, early surgical interference will eventually be considered a proper treatment of cholelithiasis. A very pertinent question is whether or not operation should be advised in the midst of a recent attack of colic, and Kehr, having, as he believes, learned to distinguish between gall-bladder colic and gall-duct colic, advises waiting when the latter exists, lest the stone be felt in the ductus or a difficult choledochtotomy need to be performed. Many will be quite unable to make this differentiation with any certainty, while to delay long with a calculus in this most dangerous locality will often jeopardize the patient.

The diagnosis once positively made, it would appear less difficult for a surgeon to approximate reasonably the burdens and the dangers of the disease in a given case, and to distinguish between when to advise waiting, when to recommend operation and when to insist upon it, than to formulate rules for others. Although one prominent authority regards the size of the stone as having an important bearing upon operative indications, as, in the first place, we can foretell absolutely nothing as to the size of the stones before they are removed or passed, and in the second place, however much the theory may appeal to rational simplicity, cases have occurred which prove that the facts fail to follow mathematical fancy. Ninety-five times out of a hundred, gall-stones occupy the gall-bladder alone or it and the cystic duct alone, and therefore, in the vast majority of cases, the indication appears to be to open the gall-bladder, remove the stones and *débris* and temporarily drain the diseased organ. In the author's opinion cholecystotomy with temporary fistula is the operation of election in the average case of cholelithiasis. Choledochtotomy is always difficult, frequently dangerous, and sometimes impossible of practical execution.

Dr. Donald MacLean agreed with Dr. Dunn and stated that a successful operation on the gall-bladder give gratifying results and left nothing to regret.

Dr. Alex. Hugh Ferguson of Chicago, considered that the most important question was when to operate, and in his opinion, when you find the gall-bladder enlarged so that apparently there is a tumor there, an operation should be performed. The size of the gall-bladder is no indication, and cases of one stone are more difficult than those of several stones. One should never wait until the development of pyrexia before opening the gall-bladder, although, as jaundice cases stand operations and chloroform very badly, as little operating as possible should be done in these cases. Of the two ways of getting at the common duct, the one internal and the other external to the duodenum, the internal is the better, and an oblique incision is usually preferable to the transverse as it gives more room.

Dr. Hunter McGuire of Richmond, gave it as his opinion that operations in these cases would some day be dispensed with as a method would be found to dissolve the gall-stones.

Dr. Dunn, in replying to the inquiry of Dr. J. C. Oliver of Cincinnati, stated that the case referred to in his paper of a patient who had died after having had two attacks of biliary colic without jaundice, had died of exhaustion. He considered the idea much too prevalent that in these cases there should be jaundice, or tumors, or colic resembling the pains of childbirth, as in none of his cases had he found tumefaction.

A FEW RECENT CASES BEARING UPON THE QUESTION OF OPERATIVE INTERFERENCE IN ABDOMINAL AILMENTS,

by Donald MacLean, M.D., LL.D. of Detroit.

The author referred to the great difficulty of deciding whether or not to interfere in cases of abdominal ailments, traumatic or otherwise, and mentioned a few cases in point. The first case mentioned was that of a woman, who had suffered from an absolute obstruction of the bowels for ten days, in which case, upon operation, a large egg-shaped calculus was found. The patient died within twelve hours. The second case was that of a man who, although he gave the history of several well-marked attacks of appendicitis, complained only of a feeling of weakness in the right iliac region at the time of the consultation. Operation was advised, the appendix was found distended with pus, and extensive intestinal adhesions were encountered. Patient made complete recovery. The third case was a young man who had had repeated attacks of appendicitis, and whose appendix, upon operation, was found deeply imbedded in an immense inflammatory mass which surrounded the cecum. The

fourth case was that of a man who was taken suddenly and violently ill with all the signs of appendicitis and suffered great distress from constant coughs, with excessive expectoration of an indescribably fetid character. Incision was made between the sixth and seventh ribs, on the right side, which fortunately tapped the depot of fetid pus, and the patient made an excellent recovery. The fifth case was that of a young man who was taken seriously ill some hours after he had been thrown from his bicycle. An operation was performed, and upon opening the abdomen the following condition was found. An ancient ulcer of the stomach had induced a firm adhesion between the pyloric end of the stomach and the duodenal mesentery. The jar of the fall had had the effect of separating this adhesion and thereby caused a rupture of the stomach at the point of the ancient ulcer and consequent adhesion. In spite of everything that could be done, the patient died twenty hours after the operation. A peculiar congenital condition was found in addition to the morbid process, namely, the left kidney was found situated just below the promontory of the sacrum, and was very small and very imperfectly developed. Complete suppression of urine existed from the time of the accident to the end of the patient's life.

Dr. Thomas H. Manley of New York mentioned a case of a young man who had been kicked by a horse, and who, when seen by his family physician, was in a state of profound shock, perfectly rational, but cold. Peritoneal hemorrhage was diagnosed, after a thorough examination, in spite of the fact that one would expect to have had a renal hemorrhage. Bad symptoms setting in on the fourth day, operation was recommended, and a horseshoe kidney was found lying over the cecum. About five feet from the duodenum were two large gangrenous patches, one of which had perforated. The patient sank and died. The question of the greatest importance is, What good would it have done to have performed a laparotomy immediately after the accident?

The President asked if Dr. MacLean considered that either of his patients died from hemorrhage, as he had removed a stone some months ago, and the patient died of hemorrhage on the third day.

Dr. J. T. Thomas, Pennsylvania, referred to the subject of enteroliths, and spoke of a case upon which he operated two years ago, and found an enterolith which entirely occluded the lumen of the intestine. The patient died in about two hours.

Dr. Winslow of Baltimore, stated that on opening the abdomen of a lady who had presented for three days symptoms of obstruction of the bowels, and in whom vomiting and persistent constipation were present, he had found complete intestinal obstruction, which had been caused by a gall-stone. The patient died shortly after the operation. He mentioned another case, that of a man who presented no other symptom than considerable pain in the abdomen and some vomiting, except the history of an injury caused by the pressure of a car. On operation, a genuine hernia in a sac, which was entirely within the peritoneal cavity, was discovered. This case also died.

Dr. Philip Marvel of Atlantic City, spoke of a case of a lady who had fallen suddenly in a store and who at half hourly intervals experienced hysterical convulsions for a number of hours. Total suppression of urine existed and at the autopsy but one kidney was found which was in the normal position on the right side and was not diseasrd.

Dr. McRae of Atlanta, mentioned a case of extreme rarity and one of important medico-legal interest. The patient had received a stab-wound between the sixth and seventh ribs, but, at the time of the consultation, he was suffering from intestinal obstruction, which had been diagnosed as cramp colic. It was decided that a hernia of the diaphragm was present and on entering the abdomen, an opening was found in the diaphragm with a band of adhesive tissue extending up to the point where the stab wound was. A portion of the intestine was found in the pleural cavity and the adhesions were very dense. The patient came out of the anesthesia and died shortly afterward. The man who did the stabbing was declared not guilty.

Dr. MacLean, in reply to inquiry, stated that he did not think the patient died from hemorrhage. Referring to his paper and the discussion, he said it was evidently the opinion of all that an early exploratory incision should be recommended, for, although, some cases get well without operation, ninety-nine in every hundred do not.

SOME MECHANICAL CAUSES OF INTERFERENCE WITH THE ACTION OF THE STOMACH AND THEIR SURGICAL RELIEF,

by Dr. W. J. Mayo of Rochester, Minn.

The author divided the subject into two classes; first, those which act from within the cavity of the stomach or its immediate connections, such as a tumor, cicatrix, or a foreign body which may obstruct its inlet or outlet, or prevent its normal muscular action, and second, those which act from without the stomach and interfere either by pressure or adhesion, obstructing its inlet or outlet, or fixing some portion of its wall, thus preventing its functions. The main diagnostic resources are the physical examination, the distention with air, and the test-meal. The author advises Fenger's oblique left lateral incision through the abdominal walls, in order to perform gastrotomy, for the purpose of retrograde dilation; Witzel's method for temporary purposes, and Frank's spout method for permanent feeding. While for the relief of non-malignant stricture at the pylorus, he considers the Hoenke-Mikulicz pyloroplastic operation the one of choice. Two out of three operations with the Murphy button were successful, and one of the two that recovered gained forty pounds within 1½ year after the operation.

Adhesions of the pylorus or duodenum to the gall-bladder, due to the inflammation excited by gall-stones, are some of the not infrequent external causes of interference with the stomach, but the most common cause is adherent omentum. The gastric distress which almost always accompanies irreducible omental hernia of any variety will disappear after the radical cure of the hernia, and the author has seen this result in a case of a man who had suffered from gastric pain and chronic indigestion for seventeen years.

Dr. Alex. Hugh Ferguson of Chicago, in discussing this paper, said he entirely agreed with Dr. Mayo's methods of treating malignant and non-malignant stricture of the esophageal end of the stomach and with the palliative treatment that he recommends for malignant disease of this region, discarding curettment, and recommending Frank's operation as superior to Witzel's and Fenger's. He also agreed with Dr. Mayo in advising forcible dilatation in diseases of the pyloric end of the stomach and also as a preliminary step to the complete removal of the pylorus.

Section on Obstetrics and Diseases of Women.

Second Day—May 6th.

Dr. Milo B. Ward of Topeka, Kan. read a paper entitled

gauze as drainage in abdominal and pelvic surgery.

He said it was idle to say that drainage is needed only when the work has been carelessly done. However perfect the technic may be, it is still a fact that there are cases whose recovery depends entirely on the drainage employed after the surgical toilet is made. The author urged the importance of the thorough use of gauze in a large variety of complications, believing it to be the material which met the most indications.

Much had been recently said relative to the poisonous tendency of iodoform gauze when used as drainage, but he had never experienced the least untoward symptom, even when used in large quantities.

What character of cases demand gauze as drainage? His answer was almost all seriously complicated conditions of the pelvic and abdominal peritoneum, and especially when the intestines are involved, and also in all cases where the peritoneum is opened through the vagina. There were no objections to the use of rubber or glass tubes in connection with the gauze, but he had never found it necessary to employ anything but the gauze.

Dr. Howard A. Kelly of Baltimore, said he no longer drained in cases of tubercular peritonitis, and the cases practically all recovered. The cases he drains remain in the hospital an average of fifty-nine days, while those he does not drain remain on an average of thirty-nine days. The cases that were drained usually had fistulous tracks. When he does drain he uses gauze, and gave his reasons for so doing.

Dr. Chas. P. Noble of Philadelphia, said the more he operates the less he drains. Of the first hundred operative cases he had, ninety of them were drained. At the present time he drains but little. His experience has been that gauze does not drain. When he uses gauze he uses a glass tube in addition to get the fluid out from the gauze.

Dr. I. S. Stone of Washington, agreed with those who favor the extensive use of gauze.

Dr. Rufus B. Hall of Cincinnati, concurred with Dr. Noble in the opinion that gauze does not drain—at least in his own cases.

Dr. Henry O. Marcy of Boston, said that in all aseptic cases he never uses drainage, but in septic ones he does. It has been a long time since he has resorted to drainage of an aseptic wound.

Dr. George M. Sternberg of Washington, made some remarks on the destruction of bacteria in wounds.

Dr. H. O. Pantzer of Indiana, said that the peritoneum was amply able to take charge of a limited amount of pus, when the infection of tissue was not too great. He thought gauze packing was unnecessary in a great many cases. He suggests the use of peroxid of hydrogen to loosen the gauze from its attachments, where the gauze is used for drainage purposes.

Dr. A. P. Clarke of Massachusetts, said that in those cases accompanied by great loss of blood from abraded surfaces, drainage should be used, while those in which there is very little loss of blood and the patient is healthy, drainage is unnecessary.

Dr. Henry P. Newman of Chicago, said it was unnecessary to drain as much as formerly and consequently the results were more favorable. The resisting power of the structures was correspondingly great. The parts were less manipulated and influenced by trauma. This of itself meant less drainage. The speaker uses lamp-wicking as a drainage material, believing it to be superior to gauze. It can be used in large quantities. It protected abraded surfaces.

Section on Neurology and Medical Jurisprudence.

Second Day—May 6th.

Dr. Theophilus O. Powell of Milledgeville, Ga., presented an article entitled,

the increase of insanity and tuberculosis in the south.

He said the negroes of Georgia, and the South in general up to 1860, enjoyed remarkable mental and physical health, and were almost entirely exempt from certain diseases, owing to the care of their owners and the hygienic precautions taken by the latter. In 1860 there were only forty-four insane negroes in the State of Georgia, the majority of whom had white blood in them. In 1870 there were 129 insane negroes in the State; in 1880, 411 insane negroes, and in 1890, 910 insane negroes in a population of 858,815, or one colored insane to every 943 of population.

Freedom removed all hygienic restraints, and negroes were no longer obedient to the inexorable laws of health, plunging into all sorts of excesses and vices, and having little control over their appetites and passions.

Dr. Powell believed that insanity and tuberculosis were first cousins, or at least closely allied. The sudden outburst of insanity with the colored race of the South came associated with tuberculosis, hand in hand, keeping pace one with the other; the prognosis of phthisical insanity being unfavorable. Hence he is not surprised to find insanity in a family strongly predisposed to phthisis, and phthisis in a family strongly inclined toward insanity. Insanity in Dr. Powell's opinion is frequently a symptom of tuberculosis. Tuberculosis is more frequent in the insane than with the sane, and this is especially true of the colored insane.

The direct and indirect effects of syphilis is one of the leading factors in the causation of insanity with the colored race. The large number in some sections that are tainted with syphilis really is alarming. In some large plantations there are few of the adult negroes free from syphilis.

Alcoholic intemperence is another leading factor as a cause of insanity. Among negroes there is a tendency on the part of the women as well as of the men toward alcoholic excess. A distinguished alienist, writing to Dr. Powell, said "That the children of intemperate parents are liable to become insane, intemperate, epileptic, and much more liable to be congenital imbeciles."

In conclusion, Dr. Powell said: "Too much liberty and freedom, so far as the laws of health are concerned, is dangerous to the mental and physical integrity of any people."

Dr. Campbell of Knoxville, Tenn., in discussing Dr. Powell's suggestive paper, said that possibly there was a defect in it, as it did not give the statistics of insanity in various other Southern States besides Georgia. Dr. Campbell agreed that there had been a large increase in both consumption and insanity in the negro since emancipation, but thought that the statistics were probably inaccurate, because we find in the asylums now a great many of what are called "defective" classes—people who are unable to make their way against strenuous competition—whereas such individuals on the plantation were not thought insane, but were useful persons.

Dr. Campbell questioned Dr. Powell's statement that the negro race was comparatively immune to consumption before emancipation. He spoke of whole plantations being devastated by the ravages of acute miliary tuberculosis, which was then called "negro consumption."

As to the connection between consumption and insanity, Dr. Campbell thought it had not been well made out, except that both lower vitality and leave the system a prey to other diseases.

Dr. D. R. Brower of Chicago, continuing the discussion sustained by the statistics of Virginia the conclusion drawn by the latter gentleman. He said in that State, before the war, the insane negroes were gathered together in a small ward of one hospital, fifteen or twenty being about the average number, and this covering all the insane negroes of the State. Now at St. Petersburg, there is a large hospital, having about seven hundred patients. He said that as the rule is very rigid, there were not included in this number any of the "defective" cases to which Dr. Campbell referred, so that this point was not well taken.

Dr. Brower said this rapid increase of tuberculosis is a menace to the white population. Some means must be devised by which the three great factors. Dr. Powell brought out prominently tuberculosis, syphilis, and alcohol, may be done away with. A fourth factor in the production of insanity is improper food.

Dr. John Punton of Kansas City, Mo., read a paper on

THE ETIOLOGY AND PROPHYLAXIS OF FUNCTIONAL NERVOUS DISEASES.

He referred to the advance in our knowledge of the anatomy and physiology of the nervous system. Every practitioner recognizes that nervous diseases are increasing at a marvelous rate.

The entire nervous system in the normal infant and child is constantly undergoing marked changes in both structure and function. The children of neurotic constitutions should be kept fat from birth, and when they arrive at school age their brains should not be forced. A child's age should not be regarded as the criterion of its mental strength and capacity, but rather its height and bodyweight. The duty of the physician is to use all possible means to secure the needed rest for all morbid conditions of the nervous system, in which nervous irritability and nervous instability are the chief clinical criteria.

Discussion on Dr. Punton's paper was postponed.

The committee on nominations reported the name of Dr. W. J. Herdman of Ann Arbor, Mich., for chairman, and Dr. Chas. H. Hughes of St. Louis, Mo., for secretary. The report was accepted, and these officers elected for the ensuing year.

THE MEDICAL ASPECTS OF CRIME,

The next paper, was read by Dr. Albert G. Corr of Carlinville, Ill.

The brain and the nervous system are the physiological organs of the mind and intellectuality, and every grouping of ideational activity, has its origin in the functional activity of brain and nerve cells. Morality, the ethical sense, the sense of moral uprightness, has such an origin, and is subject to the same laws as the functional activities of other organs, being susceptible of cultivation, repression, or perversion.

In order to lessen crime you must cultivate and develop the moral sense and repress the emotions. Children should be taught as early as possible that there is a principle of right and justice in the abstract, irrespective of any mere religious sentiment. Every school should be required to rigidly teach them the exercise of morality, to the extent of being just and upright in conduct and character. At present, teachers too often think that morals is a theological question and not to be meddled with; and there is great room for improvement in this respect.

The moral defect with its criminal tendencies is always congenital, often hereditary, and always modified in a greater or less degree by environment and synergistic influences. The liquor traffic is the greatest dispoiler of human morals and well-being. We tolerate and perpetuate a traffic that unschools and dissipates much that our well-designed efforts have wrought. Its tendency to produce crime and make criminals is proven by history. Dr. Corr referred to Dr. Robert Boal's paper before the Illinois State Medical Association in 1894, advocating emasculation and ovariotomy as penalties for crime and as tending toward the reformation of criminals. He did not agree with Dr. Boal's conclusions, and quoted Dr. N. S. Davis' statement that he did not believe that human depravity was greatly ruled by simply the sexual organs in either sex.

THE PHYSICIAN AND THE CRIMINAL,

by Dr. J. B. Ransom, of Clinton, N. Y., was read by the Secretary.

Dr. Ransom commented upon the dearth of records as to the study of criminal man. A glance at the census figures of the United States from 1850 to 1890 shows a proportionate increase of incarcerated criminals of nearly five fold; and the number of homicides in 1889 was 3567, while in 1895 it was 10,500. He referred to the work of Sampson in America, Forbes Winslow in England, Camper in Germany, Ave Lallemant in France, and also to Drs. Arthur McDonald, Jacobi, and Flint in our own country.

The alarming ascendency of crime should excite society to vigorous effort. The modern trial, sentence, and punishment has failed. The procedures of the courts and administration of law are based upon the theory that crime must first be detected and then punished, losing sight of the fact that men are not alike, and that punitive measures should be adapted to the individual characteristics of the criminal. Crime is often the natural outcome of disease, and among its causations are arrests of growth, deformities, asymetries, intercurrent diseases, as well as psychic aberrations and disorders. Many criminals are diseased and present anomalies of structure as the cause of crime, but there are criminals who are so from environment, and from the inhumanity heaped upon them, and there are also criminals of circumstance or accident. Lombroso has shown that men with normal skulls were three times as numerous among soldiers as among criminals. This excessive abnormality among criminals extends to physiognomical, psychological, and physiological anomalies.

He estimates that twenty-five per cent. of all criminals would show disease of the heart or of the great blood vessels. It is easy to understand how a diseased heart can produce brain disturbance. Meningitis is also a prolific cause of crime. A large proportion of crime is the direct and natural outcome of some form of disease. It being conceded that crime is the result of disease, our conception of the criminal at once is such as to change the whole application of the principle of treatment. The criminal should be assisted in overcoming his misfortune. He is much like other men—amenable to treatment and improvement.

Dr. Ransom adopted the classification of Ferri, which is as follows: (1) the insane criminal, (2) the born criminal, (3) the habitual criminal, (4) the occasional criminal, (5) the criminal of passion.

As to (1), they are divided into (*a*) the paranoiac, (*b*) the psychic epileptic, (*c*) the phrenasthenic or pschopathic, (*d*) the morally insane, or reasoning phrenastheniac.

The born criminal most frequently presents anomalies of organization and psychical aberration; they are criminals, as it were, "by trade," and deficient in both moral and physical sensibility. Physical insensibility is sometimes so marked that such men exhibit no evidence of pain under the most painful operations.

The occasional criminals are such from environment and circumstances, and do not present anomalous conditions.

The criminal of passion is a highly neurotic type, and their study is of interest to the physician in that they approximate criminals of unsound mind.

The treatment of acquired and intercurrent disease of the criminal should embrace all the medical, surgical, mechanical, and therapeutical means at the physician's disposal.

Shock often causes many beneficent effects. Thus corporal punishment has often resulted in the cure of a certain psychosis. This is substantiated by statistics relative to the commitment of insane convicts to the State Hospital for Insane Convicts, which have more than doubled since the abolition of corporal punishment in the prisons of the State of New York.

This good effect extends to operations, and Dr. Ransom found that by freely cutting through the scalp, down to the bone, and raising the periosteum, great improvement followed. Two horseshoe incisions are made, five inches in length, on each side of the head, 1½ inches from the median line at the apex of the cranial arch. After separating the periosteum from the bone for about one inch all around the incision, grooves were cut in the bone, but no bone removed; the wound was packed with iodoform gauze and dressed ordinarily. Afterward, they were packed loosely until healed by granulation, no sutures being put in. In some instances the good results are marvelous.

The discussion on the foregoing papers was opened by Dr. D. R. Brower, who emphasized the importance of the subject of the Medical Aspects of Crime. He urged the profession to enlist in a crusade for the more rational treatment of crime. He favorably commented upon the custom of indeterminate sentences, whereby the criminal was induced to improve by the prospect of release added to the fear of continued imprisonment. A criminal once arrested should be kept in charge until cured, and should not be loosed upon society.

Dr. John Punton agreed with the authors and with Dr. Brower, though he suggested that the task is an enormous one, going to the root of our present institutions.

Dr. Campbell was not sanguine as to the results to be obtained by such agitation, as in his opinion this great increase of the criminal class is owing to the advance of the civilization, the multiplication of the species, and the growing stress upon the means of gaining a livelihood. He thought if all these admirable suggestions were carried out not more than five per cent. of crime would be stopped.

Dr. Powell fully agreed with Dr. Brower's statements.

Dr. Quimby thought the whole legal profession required education in the matter of treating the disease of crime, and the Church and the law having failed to repress crime, the medical profession should lend their aid in that direction.

Dr. Bishop favored radical measures, but advocated sentencing criminals for certain periods, with the proviso that if they were not improved at the end thereof, the time should be extended indefinitely until betterment.

Dr. Corr renewed his appeal to the profession to formulate some plan for the proper treatment of criminals.

The Chairman, Dr. T. D. Crothers, thought the subject a very promising one, and that we were at the be-

ginning of a great change. He hoped the matter would be brought up next year.

SOME RELATIONS OF CRIME TO INSANITY AND STATES OF MENTAL ENFEEBLEMENT,

by Dr. B. C. Allison, Matteawan, N. Y., was read by title.

Section on Children's Diseases.

Second Day—May 6th.

Dr. Henry E. Tuley of Louisville, Ky., read a paper upon

SEPSIS OF THE NEWBORN.

In this he included the report of a case in which the mother, who was a healthy woman, had been in a well-appointed hospital, and under the supervision of competent physicians and trained nurses for several weeks before confinement. The latter was normal and followed by an uneventful recovery. She had no vaginal discharge before confinement. The child was healthy until an infection occurred at the umbilicus in spite of the most carefully conducted dressings which were applied. The author made the suggestion that this case should not lead any obstetrician to relax his careful use of aseptic dressing of the cord.

Dr. A. C. Kellogg exhibited a small rubber ring that he had used and considered safer than the ordinary ligature for this purpose. Its sterilization was readily accomplished.

Dr. Parks suggested massage of large cords to reduce their size.

Dr. Cotton of Chicago, said, to prevent infection from the diaper, he used a large absorption pad, simply using the diaper as a means of retaining the latter in place.

The subject of

CHOREA

was introduced by a paper by Dr. Henry Hatch of Quincy, Ill. He believed the nervous affection was directly due, in the majority of cases, to the modern faulty methods of rearing and educating girls, especially. He suggested a modified rest treatment, combined with tonics of which rapidly increasing doses of strychnia.

Dr. W. A. Dixon of Ripley, O., mentioned the frequency of cardiac complications in chorea.

Dr. Callan spoke of the difficulty of obtained necropsies upon uncomplicated cases of this disease, and mentioned fright as one of its etiologic factors. The patients were usually anemic, and showed a diminution of hemaglobin. Arsenic was a good tonic and alleged specific.

Dr. Hatch, in closing the discussion, emphasized the beneficial influence of strychnia upon these cases.

General Session.

Third Day—May 7th.

Dr. E. E. Montgomery of Philadelphia, read the report of the Board of Trustees of the Association, which showed a total balance of $10,084.98. The Board considers this a most excellent showing, considering the financial condition of the country and the radical change in the policy of the *Journal* instituted at the last meeting.

The Board placed on record their appreciation of the valuable services of their late colleague. Dr. James E. Reeves, and their deep regret at his untimely death.

On motion the report was adopted.

Dr. George H. Rohé of Maryland, in the absence of Dr. A. L. Gihon, read the report of the Rush Monument Fund Committee, which, on motion, was received and filed.

The Nominating Committee made a partial report, viz., the place of meeting, recommending Philadelphia, time, first Tuesday in June, 1897. Unanimously adopted.

Dr. H. D. Holton of Vermont, offered to be one of the forty to give $100 toward the Rush Monument.

On motion of Dr. Holton the trustees were authorized to establish a building fund.

Vice President Dr. J. C. Le Grand, then took the chair and Dr. Nicholas Senn of Chicago, delivered the address in surgery. (See page 507 of last weeks issue.)

On motion of Dr. MacLean of Detroit, the thanks of the Association were tendered to Dr. Senn for his masterly address.

The secretary read his annual report, which contained nothing of special interest. On motion it was adopted.

The following preamble and resolutions were offered by Dr. Senn, Chairman of the Committee on Vivisection in the District of Columbia.

Whereas, The members of the American Medical Association recognize the fact that the development of scientific medicine has resulted largely from experiments upon the lower animals; and,

Whereas, Anesthetics are habitually administered to animals subjected to painful experiments; and,

Whereas, Restrictive legislation is in our opinion unnecessary and opposed to the continual progress of medical science; and,

Whereas, It is an unjust reflection upon the humanity of those engaged in animal experimentation to enact laws requiring them to use anesthetics and appointing inspectors to see that they do so, and,

Whereas, Far more unnecessary pain is constantly being inflicted upon the lower animals for sport and for game than in biological and pathological laboratories; and,

Whereas, No evidence has been presented by those who advocate restrictive legislation showing that abuses exist in the District of Columbia; and,

Whereas, Results of great practical importance have been attained by experiments on the lower animals made in the Government Laboratories in the District of Columbia; therefore be it

Resolved, That the American Medical Medical Association earnestly protests against the passage of Senate Bill No. 1552, entitled, "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia," or any modification of this Bill, unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals.

Resolved, That copies of these resolutions, attested by the signatures of the President of the American Medical Association and of its committee appointed to draft these

resolutions, be sent to the chairman of the committees in the District of Columbia in the House of Representatives and Senate of the United States.

(Signed) NICHOLAS SENN,
WILLIAM OSLER,
GEORGE M. GOULD,
J. MCFADDEN GASTON,
DONALD MACLEAN.

On motion of DR. E. D. FERGUSON of Troy, N. Y., the resolutions were adopted.

On motion of Dr. Westmoreland, the program for the Jenner Centennial Memorial was made the order of business for to-day.

The SECRETARY read the following from the New York County Medical Association:

Resolved, That this Association declares its continued attachment to the Code of Ethics of the American Medical Association, and deprecates any management of the affairs of that Association except by the various State and County Associations and Societies in affiliation therewith, by their regularly appointed delegates.

Resolved, That delegates appointed by this Association to the meeting to be held in Atlanta, Ga., be instructed in accordance with this action.

On motion the resolutions were received and filed.

DR. H. D. DIDIMA, New York, read the address of DR. N. S. DAVIS of Chicago, this being the opening paper of the Jenner Centennial.

DR. C. S. MCGAHAN, Minnesota, read for DR. C. N. HEWITT of Red Wing, Minn., his paper entitled

A TRIBUTE TO THE MEMORY OF EDWARD JENNER,

by title.

DR. J. COCHRAN, Alabama, followed by reading a paper, the title of which was not given.

DR. GEORGE M. STERNBERG of Washington, read a paper entitled

SCIENTIFIC RESEARCHES RELATING TO THE SPECIFIC INFECTIOUS AGENT OF SMALLPOX AND THE PRODUCTION OF ARTIFICIAL IMMUNITY IN THIS DISEASE.

DR. DIDIMA presented by title a record by DR. D. H. STORER, Rhode Island, of

THE MEMORIALS, MEDALS, ETC., OF EDWARD JENNER.

DR. F. C. MARTIN, Massachusetts, read a paper on

THE PROPAGATION OF VACCINE VIRUS.

DR. EUGENE FOSTER of Augusta, Ga., read a voluminous and valuable paper on

THE STATISTICS OF VACCINATION.

On motion of DR. J. F. HIBBERD, Indiana, it was

Resolved, That the papers read at this Jenner Centennial Celebration be referred to the Jenner Centennial Committee for revision and selection of those deemed proper to be published in book form and in such number as the committee may believe there will be demand for.

On motion of DR. DIDIMA the thanks of the Association were tendered to the writers of the papers.

Adjourned.

SECTION ON SURGERY AND ANATOMY.

THIRD DAY—MAY 7TH.

LIGATION OF THE EXTERNAL CAROTID ARTERY.

by WILLIAM PERRIN NICOLSON, M.D., Atlanta, Ga.

This operation was done in conjunction with exsection of the jaws and of the inoperable diseases of the same.

DR. PARKER of New Orleans, in discussing this paper, said: "My experience in ligation of the external carotid has been very limited and I have never seen such a good effect from the operation in reducing the size of a foreign growth as that mentioned by the author. I agree with him in the knot he employs, but with regard to the suture, I have been using kangaroo in preference to catgut.

DR. EDWARD SOUCHON wished to warn one to be very careful in tightening the ligatures; otherwise, the coats of the artery will be ruptured and a secondary hemorrhage result.

DR. NICOLSON, in closing the discussion, said: No one could be more surprised than I was at the prompt and extensive effect upon the foreign growth by the ligation of the artery. Although the operation is usually a very bloody one, ordinary sponging will always control the hemorrhage. It is well to ascertain with the finger when the circulation has been controlled as one can thus avoid the risk of rupturing the coats of the artery.

THE TECHNIC OF REMOVING THE APPENDIX VERMIFORMIS CECI.

Report of one hundred cases by DR. M. M. JOHNSON of Hartford, Conn.

The author described the method of preparing the patient for the operation, which he is in the habit of employing in this operations. He spoke at some length concerning the incision to be made and considered that the statement of Dr. Morris, "An inch and a half and a week and a half" contained a sound surgical principle to go upon. He also strongly advised as little manipulation as possible of the intestines. In chronic recurrent cases he made an incision one and a half inch long directly over the appendix, and when the peritoneum is reached a catgut suture is passed through it at the upper angle of the incision, so as to prevent its retraction. In finding the appendix he passes the thumb and index finger through the incision, seizes the colon, which he draws through the incision until the appendix is brought into view. When the cecum is surrounded with a pus sac, a perforated and sloughing appendix is usually found and should be removed. It should be a fixed rule never to close up the incision without finding and removing the appendix. The treatment of the stump resolves itself into the treatment of an intestinal perforation and the surgical rule for the treatment of this condition should not be violated in the treatment of the stump.

In closing the incision we are justified in assuming that the various layers of tissue are arranged in the best possible order and the work of nature should be respected by leaving them as nearly as possible as they are found. By making gentle traction on the catgut-suture passed through the peritoneum at the upper angle of the incision, the retraced peritoneum is brought into view, and with a

Martin needle, loaded with No. 2 catgut, a stitch is easily passed through the free borders of the peritoneum and the edges drawn together. By removing the original suture and making gentle traction on the last stitch enough more of the peritoneum is drawn into the incision to take another stitch, and this is continued until the peritoneal incision is closed by a continuous catgut suture. The transversalis Fascia and transversalis and internal oblique aponeurosis is secured by a continuous suture separately. The skin is put hard on the stretch by a tenaculum placed in the angles of the incision and the edges are united with No. 0 (zero) catgut in a fine needle. The author has never had a case of hernia following this method of closing the incision. Catgut is used throughout the entire operation which is sterilized by the author himself.

With regard to the time for operation this should be decided from the standpoint of the best interests and safety of the patient. In the author's opinion, operative measures should be an early consideration rather than the last resort. Of 100 operations performed by Dr. Johnson, 98 resulted in recovery and 2 in death, of which number 64 were males and 36 females.

Dr. Parker of New Orleans, in discussing this paper said: I cannot agree with the author as to the advisability of at all times removing the appendix, and think that in those cases where the appendix is surrounded by an abscess, all that is necessary is to open the abscess and drain the region.

The Secretary, in discussing this paper, said: I fully agree in Dr. Parker's remarks, and have not encountered a single recurrence after this method has been employed. I think each case should be treated entirely on its own merits.

Dr. Alex. Hugh Ferguson of Chicago, in discussing this paper, said: I do not wish to discuss this paper, but would like to say that I consider the most favorable time to operate between the attacks, and I believe it dangerous to operate during the acme of the inflammation. With regard to the length of the incision, in ninety-nine per cent. of the cases an inch and a half and a week and a half is wrong. The best way of draining in these cases is with gauze and a glass-tube.

Dr. Haines of Omaha, said: I consider the routine practice of removing the appendix one to be condemned.

Dr. Johnson, in closing the discussion, said: When the appendix is situated in the wall of a pus sac, I think it should always be removed and I have never yet had a case of peritonitis resulting. I do not think a seven-inch incision should be required in any case, and some experience will enable one to perform the operation through a very small incision.

WHO WAS THE FIRST TO ILLUMINATE THE SIGMOID CAVITY?

by J. G. Carpenter, Stanford, Ky. This paper was not discussed.

ON THE EXPLORATION OF THE BRAIN WITH A NEEDLE AND SYRINGE THROUGH CAPILLARY HOLES DRILLED THROUGH THE SKULL,

by Edward Souchon, M.D., New Orleans, La.

This method is proposed to take the place of trephining, *i.e.*, removing a ring of bone before exploring the subdural spaces and the brain. The simplicity of the procedure and its safety recommends it as an easy means within the reach of a greater number than the other comparatively more serious and complicated operation of the trepan. By its ready employment it is expected that many lesions, especially abscesses, cysts, and hard tumors can be earlier diagnosed and located with certainty after exploring by this means the region suspected from the distant symptoms. It is only in cases of tumors of the same consistency as the brain, that is soft but not fluid, that the explorations would be of no avail, but this would also be the case if the trepan had been used instead of the drill. Even then, in some cases, the microscopical examination of the particles expelled from the needle might give reliable information. The *modus operandi* is most simple. Spots of the scalp are disinfected; a puncture is made with a sharp bistoury down to the bone. The drill employed is an ordinary stem watchmaker's drill to which is added an adjustable guard to prevent unlimited penetration of the drill into the brain substance after penetration of the bone. When the inner table is reached the drill is worked more cautiously. The perforation of the skull is easily completed with the point of a No. 1 aspirator needle attached to a syringe. All must be done under thorough asepsis and according to the rules followed in exploring after ordinary trepanation. Several holes can be drilled at a distance from one another, at the same time. Apprehensions have been expressed as to the danger of hemorrhage, but the writer cites experiments made by himself on dogs whose brains were several times explored at several places at each sitting and which never exhibited any symptoms of hemorrhage. One of the dogs was killed and no trace of hemorrhage worth mentioning was found. He reports also *post-mortem* examinations by Spitzer, Meinchard, and Schmidt, of cases where the subject had succumbed from the natural course of the original disease and where no traces of hemorrhage were found.

Dr. Thomas H. Manley of New York, in discussing Dr. Souchon's paper, said that, except in very exceptional cases, he was unable to agree with Dr. Souchon as to the value of the needle in the exploration of the brain.

Dr. Nicholas Senn of Chicago agreed with Dr. Manley, but thought the needle might be of some service when combined with a temporary resection of the skull or when such pathological productions as blood, serum, cysts, or abscesses were present.

Dr. Alex. Hugh Ferguson of Chicago had not found, in his experience, that the use of the needle was a reliable method.

Dr. Souchon closed by stating that the two important things to bear in mind was the size and the cleanliness of the needle.

SURGICAL SHOCK; A NEW TREATMENT, WITH DEMONSTRATIONS,

by Dr. Fenton B. Turck, Chicago, Ill.

The author gave a practical demonstration of his method of treating surgical shock, and mentioned the result ob-

tained in a few of the twenty-three experiments he had performed.

This paper was not discussed.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

THIRD DAY—MAY 7TH.

DR. A. P. CLARKE of Cambridge, Mass., read a paper entitled

DEGENERATIVE CHANGES THAT OCCUR IN UTERINE FIBRO-MYOMATOUS GROWTHS,

by DR. AUGUSTUS P. CLARKE, of Cambridge, Mass.

The author begins by saying that the presence of uterine fibroid growths has for the past few years given rise to much discussion among gynecologists; the consideration of the surgical treatment which they have demanded has received much attention and measures of procedure, in some instances apparently opposite, have sometimes been adopted. The success attending the removal of fibroid growths either by partial or by total hysterectomy has brought the subject of such neoplasms more prominently before the profession. This has stimulated to such an extent a desire for greater knowledge concerning them that only the most careful clinical experience and pathological investigation will be found to be capable of furnishing the data necessary to determine the proper solution of the question. Late experience has shown that certain pediculated subserous fibroids in taking on retrograde processes become harder and more unyielding from the presence of the excess of the fibrous element and from the occurrence of calcareous deposits that may take place in the tissue of the morbid mass. Fibroids in such a condition may exercise a pressure that may result in renal and in other complications.

The author mentions as coming in his own practice cases that, besides giving rise to hemorrhage, have the history of such sequelæ. Contraction from various causes and the consequent cutting off of the arterial supply may lead to suppurative changes and liquefaction of the tumor. Gangrene is another result that may occur. This may lead to a general septicemia of the organism. Cases illustrative of these conditions are mentioned. Fibroids though liable to increase from excitation of the menstrual periods and from pregnancy, especially those of the submucous variety and those akin to the myxomatous class, may nevertheless undergo marked diminution after parturition. The author doubts, however, whether such growths ever wholly disappear; they may for indefinite periods remain unaffected but they are liable to become the foci of malignant degeneration. The author further says that the record of cases coming in his own practice shows unmistakably that the malignant degenerative changes to which these growths are prone are not of rare occurrence. The favorite haunt of uterine cancer is in the cervix uteri; it often shows its development in the fissures of the lacerated portion. From this center the morbid process may radiate and extend to the upper segments of that organ. The characteristic symptoms of the disease with the cachexia of malignant invasion are early accompaniments. He says the presence of malignant disease in cases of fibroids is not a mere complication, but he holds to the view that it is a degenerative change.

In presenting a contrast of the two conditions he says that in malignant degeneration of fibro-myomata the morbid processes leading to the development manifest other aspects. The early appearance of fibroids may not be attended with any definite constitutional peculiarities. There will be no facies of a distinctive type; except for the results that may be attendant on metrorrhagia or menorrhagia, the occurrence of the irregular outline of the growth and the consequent pressure or other annoyances experienced, the patient may have the appearance of being in almost perfect health. In the unmarried or in those who have not suffered from cervical laceration the lower section of the uterus may be entirely free from the morbid invasion. The freedom in this part of the uterus may continue after a fibroid has assumed malignant phases and until the development has extended downward.

Aneurismal and also fatty degenerative changes are spoken of and discussed at some length. Another form which has a practical significance to the abdominal surgeon is that resulting from the occurrence of enormously enlarged vessels or capillaries; these vascular elements may develop at the expense of the connective and the muscular tissues. The occurrence of these telangiectatic myomata may be a fruitful source of hemorrhage and thus threaten or destroy the life of the patient. Early surgical interference offers the best means for relief, so also does such surgical treatment in cases of myoma lymphangiectodes which occasionally occur. Inflammation in the tissue of a fibroid may extend to the arterial coats, producing arteritis, and lead to the obliteration of those vessels. Colloid degeneration may take place in the deeper portions and may give rise to conditions similar to those in which the tumor becomes liquefied. In many fibroids the vascular element is not plentiful. The capillaries in some of the forms are prominent while in others special artificial injections that are carefully made show that but few vessels permeate the mass. The irritation and hyperemia with which the adjacent mucosa may be subjected are the cause in some instances of the hemorrhage. Calcification of fibro-myomatous growths, as already referred to is an occasional sequel; so also is the production of tissue-resembling cartilage, which, as a secondary result, has occurred in the mass. One of the most frequent transformations which, without doubt, fibromyomata may undergo is their contraction and atrophy after the cessation of their normal development. Myxomatous changes and submucous alteration tend to the destruction of the growths. The intra-parietal contractions to which they are subject serve to hasten the production of polypi and the commencement of extrusion from their normal sites. All these several kinds of secondary transformations occurring in fibro-myomata are productive of further expulsive processes that often require only timely surgical interference as measures supplementary to the effecting of their complete removal.

DR. CHAS. P. NOBLE of Philadelphia, read a paper entitled

DRAINAGE VERSUS RADICAL OPERATION IN CASES OF LARGE PELVIC ABSCESS.

The object of the paper was to call attention to the value of drainage in the treatment of large pelvic abscesses, and to contrast the results which can be secured by this method of treatment with those which have been obtained by the more radical operation of abdominal section, together with the removal of pus sacs, whether of ovarian, tubal, or other origin. An ordinary case of pyosalpinx, or abscess of the ovary, chronic in character, was ruled out of consideration. The paper dealt only with those cases of extensive suppuration in which, in general, in addition to pyosalpinx, or abscess of the ovary, there exists an intraperitoneal abscess or abscesses, and in which the pelvic viscera are matted together by extensive exudate, and in which very frequently at the time the patient comes under the observation of the surgeon, active inflammatory or septic processes are going on, which have confined the patient to bed for weeks and probably months, so that she is greatly reduced in strength and vigor, and but little able to resist the shock of a serious surgical operation.

Until June 11, 1895, the author had never employed drainage without abdominal section in the treatment of this class of cases, but had always operated on them by abdominal section and the removal of the diseased parts. Since this period the speaker had operated upon eight cases, each of whom was a typical and very marked example of the class of cases under consideration, by simple drainage without death. Seven of these women had been critically ill at the time of the operation. They had been confined to bed with septic fever from three to eighteen weeks, and he felt certain that if operated upon by abdominal section, at least six of the eight would have died of shock of septic peritonitis.

SOME SUGGESTIONS IN THE PROPHYLAXIS AND MANAGEMENT OF PUERPERAL ECLAMPSIA.

This paper was read by Dr. H. D. Thomason of Albion, Mich. He first dwelt upon the pathology and etiology of puerperal eclampsia, saying that it was still an unsettled question. As soon as he is satisfied of the viability of the child, he believes he is not only justified, but it is his duty to bring about premature labor, *first*, upon the ground of safety, welfare and comfort of the mother; *second*, for the welfare and safety of the child. A case coming under the author's observation was reported as an illustration.

Dr. Henry O. Marcy of Boston read a paper entitled:

INTESTINAL OBSTRUCTION AFTER LAPAROTOMY.

Before entering into a general discussion of this subject the author gave a brief report of all the cases of intestinal obstruction following laparotomy which had come under his observation. He reported seven cases.

The portion of the intestine involved in the obstruction in each case was the lower part of the ileum, and that the obstruction was caused either by an adhesion of the intestine to an infracted peritoneal surface, or by a constriction. In three of the cases reported, two of which were fatal, the intestinal obstruction occurred from incarceration of the lower portion of the small intestine, caused by adhesive bands of old formation. In the two fatal cases a laparotomy had been performed some years previously, and although in both they were non-suppurative cases, adhesions had formed, probably caused by undue pressure of opposing peritoneal surfaces, owing to pathological conditions.

The history of the cases teach a wide difference in the acuteness and severity of symptoms from that of intestinal obstruction, as usually noticed in volvulus or strangulation resulting from hernia. After outlining the treatment for the relief of the obstruction, Dr. Marcy emphasized the practical importance of the preparation of all patients for laparotomy. The condition of the nervous system is important. The lowering of the nervous tension is a very great gain. The substitution of hope for fear and confidence in the outcome is of much more value than he was earlier constrained to believe, and why should not this be true, since the best definition of life itself is the equilibrium of the vital processes in their sway over the organic matter which they hold in control.

Intraperitoneal surgery must ever be of the highest order and accuracy and completeness of detail must go hand in hand in every process to prevent infection. Where these great surgical laws have been complied with, recovery is in direct ratio with the minimizing of the devitalization of the patient. These are the almost ideal results to which modern surgery has already attained, and upon their practical application depends the marvelous success of the surgeon of to-day.

Dr. E. E. Montgomery of Philadelphia, followed with a paper entitled

PUERPERAL SEPSIS, ITS PROPHYLAXIS AND TREATMENT.

Dr. R. R. Kime of Atlanta, read a paper entitled

PUERPERAL INFECTION, ITS PATHOLOGY, PREVENTION, AND TREATMENT.

The author stated that prevention of puerperal infection is accomplished by strict asepsis in obstetric practice, as well as thorough emptying of uterus and securing proper contractions with repair of lacerations.

Dr. Albert H. Burr of Chicago, read a paper on

GONORRHEA IN THE PUERPERIUM.

The author confesses to a feeling of insecurity in every case of approaching confinement, where he knows beforehand, or has reason to suspect the existence of gonorrheal infection, either active or latent. In an obstetrical experience of five hundred cases he has had three fatalities, each of which is directly traceable to gonorrhea. In many of the remaining cases of puerperal sepsis, more or less severe, he had found by clinical history or by microscopic verification, the presence of a gonorrheal infection.

Dr. Burr stated that it would be a righteous advance when the State affords some protection to the innocent by placing legal barriers to the matrimony of all individuals who, by competent medical inspection, cannot present certificates of freedom from all contagious and hereditary

diseases. Nor should the line be drawn on the male sex only.

HYSTERECTOMY AS AN ACCOMPANIMENT TO BILATERAL REMOVAL OF THE APPENDAGES.

This paper was read by DR. REUBEN PETERSON of Grand Rapids, Mich.

The author made a plea against the adoption of the universal rule in regard to these cases as if it were for all time settled. He claims that the surgeon has no right to remove the uterus after removal of the appendages unless he is convinced that the organ is diseased beyond the hope of cure by less radical methods.

DR. MILO B. WARD of Topeka, Kan., was elected *Chairman* of this section, and DR. GEORGE H. NOBLE of Atlanta, Ga., *Secretary*.

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE.

THIRD DAY—MAY 7TH.

The topic before the Section on Neurology and Medical Jurisprudence was

MEDICAL EXPERT TESTIMONY.

The first paper was entitled

PROPOSED REGULATION OF MEDICAL EXPERT TESTIMONY,

and was read by DR. A. WALTER SUITER, of Herkimer, N. Y., who described the present method of expert testimony as ridiculous. Specialists of the most extended experience should alone be permitted to testify; indeed, expert witnesses should in all cases be officers of the court, and independent of the parties to the suit,

Dr. Suiter advocated the appointment of a Commission of Experts by the court to decide all such questions as should be submitted to them; also, the establishment of an educational curriculum, defining the requirements necessary before a physician is allowed to occupy the position of expert. He also said that members of such commissions should be allowed a just compensation, to be paid by the county. He gave the draft of a bill which it is proposed to shortly introduce into the New York legislature.

The next paper,

INSANITY IN COURT,

by DR. L. HARRISON METTLER of Chicago, Ill., was read by title.

EXPERT TESTIMONY IN DISPUTED CASES OF INEBRIETY,

was the title of an article read by DR. T. D. CROTHERS, Hartford, Conn., in which he emphasized the importance of alcohol as a factor in the production of insanity, and the fact that when a man, after a long history of debauchery, committed some crime for which there was no apparent reason, there was a strong likelihood of his insanity; that in the determination of insanity the entire history of the case should be taken into consideration, and the expert should not be limited to what the patient actually said or did at or about the time of the commission of the act in question.

DR. DANIEL R. BROWER of Chicago, Ill., then presented a paper upon the

NECESSITY OF REFORM IN MEDICAL EXPERT TESTIMONY.

in which he set forth the defects of the present system and urged that the medical profession unite in an attempt to secure some much-needed changes.

The discussion on the foregoing papers was opened by DR. CHARLES H. HUGHES of St. Louis, Mo., who said: The question of expert medical testimony is a far more difficult question to determine by legislative enactment than at first blush appears. The chief difficulty in the whole question is the quality of the expert testimony itself, which should be improved.

In cases of insanity we are enabled by careful interrogation of the patient to establish the systematic evidences of disease in the individual's brain, just as we determine disease in the body, because mental disease, like disease in any other region, obeys certain laws. The departure from the states of feeling and modes of thought, usual to the individual when in health, can generally be placed very plainly before a court by experts, so as to bring conviction to the average jury, and reflect a reasonable amount of credit on our profession.

DR. HAROLD N. MOYER, Chicago, Ill.: The subject may be divided into the mischief and the remedy. As to the first, the present system is not nearly so bad as has been stated. The defects of the system are more or less inherent in the constitutions of society and human individuals themselves. Again, medicine is not an exact science. On some subjects there are wide divergencies of opinion.

The remedies are divided into two clases: (1) the continental system, limiting the function of the jury who must accept the experts' decision as to the matters referred to them as final; (2) simply changing the manner in which experts are summoned, and obviating as far as may be bias among them. Of course, it would be advisable to rob experts of all partisan feelings and tendencies, making them experts of the court, not of the plaintiff or defendant. Dr. Crothers carries his opinion as to the effect of inebriety too far in Dr Moyer's opinion,

DR. ROHÉ: It was suggested in Maryland to authorize the court to appoint a commission of three physicians qualified and advanced in medical science, and experienced in the treatment of insane persons, who should examine the individual personally, hear the testimony, if any, and report to the court under oath their findings; the court to have power of discharging the commission, or if desired, reverting to the old form of inquiry by jury. Such a commission should only be allowed in criminal cases.

DR. H. O. MARCY, Boston, Mass.: Massachusetts suffers perhaps more than any other State from the present conditions. The best men in Massachusetts will not appear as experts in courts.

DR. H. S. DRAYTON of New York: This matter has been under consideration in New York City, by both physicians and lawyers, for four or five years. A commission appointed by the court in each case seems to be favored. Dr. Drayton referred to the Carlyle Harris case,

in which many eminent experts were so seriously treated. He said there had been a number of instances of insistence upon a categorical answer, but that the physician should always insist upon qualifying his response. He advised giving written opinions.

Dr. Bishop of Pennsylvania: If one is asked a question and required to answer yes or no, all that one need do is to say "I don't understand." Medical experts are sometimes inclined to make speeches on the stand and this tendency gets them into trouble.

Dr. Moyer: None of us have ever favored a permanent Commission or the Continental System. The best method is the appointment of separate experts by the court for each case.

Dr. Suiter, of Herkimer, N. Y.: We are eager to receive suggestions. As to the method of appointment, everyone is agreed that the appointment should be made by the court and the county bear the expense.

Dr. Harold N. Moyer then made a few remarks on the

MEDICO-LEGAL SIGNIFICANCE OF THE SKIAGRAPH.

saying that it had only come into court on two occasions, and then was readily admitted. He referred to the use of the skiagraph in determining the difference between genuine and imitation gems, and he also showed a large number of interesting skiagraphs which had been made use of preliminary to operative procedure.

Dr. W. J. Herdman also discussed the Rontgen rays, illustrating his statements by drawings on the board.

Dr. G. W. Drake of Chattanooga, Tenn., said the great question now is how to make pictures more quickly, and this is being attained very rapidly. We want to get so that we can put the fluoroscope to the eye, and learn diseased tissue from normal tissue by relative opacity!

Dr. H. O. Marcy of Boston, Mass., read a paper on

HERNIA FROM A MEDICO-LEGAL STANDPOINT,

and spoke of the necessity of proper operation in cases of hernia, because sins of omission were just as grave as sins of commission. He wished to impress upon the profession the requirements of this large class of patients.

Dr. Moyer expressed his gratification at Dr. Marcy's addition to the literature on this point, which he thought was somewhat scanty.

Dr. Hughes said he had always been under the impression heretofore that accident was a frequent cause of hernia, but he would, of course, defer to Dr. Marcy's judgment on this point,

Dr. Bishop thought the paper would be of value in laying stress upon the fact that operation in hernia is comparatively safe and the danger from no operation much greater.

General Session.

Fourth Day—May 8th.

The Treasurer, Dr. Henry P. Newman of Chicago, read his report, showing a healthy condition of the treasury.

On motion the report was adopted.

The address on

STATE MEDICINE

was then delivered by Dr. Geo. H. Rohé of Maryland. (See page 510 of last week's issue.)

Dr. Bulkley of New York, from the Executive Committee, offered the following:

The Executive Committee report the following resolutions and recommend their adoption:

Resolved, That in accordance with the standing rule of the Association, the Committee of Arrangements for the next session is requested to arrange the meetings of the Association and prepare the program for the sections so that they will not conflict. It is suggested that if the general sessions on Wednesday and Thursday be called at 11 o'clock it may remedy the evil.

Unanimously adopted.

Resolved, That the committee of arrangements for next year, and hereafter, be directed to prepare signs for each State and Territory, also for the District of Columbia, and the Army, Navy, and Marine Hospital Service, and to locate them in the hall of meeting that the delegates shall meet beneath them for the selection of members of the nominating committee.

Resolved, That the elections for such members of the nominating committee shall only be legal when held in these localities.

On motion of Dr. Love, this was laid on the table.

The following amendment was offered by the business committee:

Resolved, That there be made an executive council of five, consisting of the three officers of the executive committee and two officers chosen by election. Of this council of five, one must belong to the Section on Practice of Medicine and one to the Section on Surgery and Anatomy. To this executive council shall be delegated all the duties of the executive committee during the intervals between its meetings. (Laid over for one year.)

Dr. Alonzo Garcelon of Maine, offered the following resolution:

Whereas, This association has authorized the trustees to establish a building fund, and whereas the question of a permanent location for the *Journal* has never been decided by a vote, therefore be it

Resolved, That the trustees be, and are hereby instructed, to cause a vote by ballot to be taken, and on this question all members shall have the right to vote. The ballots may be received from and after June 1st until July 31st, when the ballot shall close. No ballot shall be counted in favor of any particular place, unless the name of the member voting shall be signed thereto. The ballot shall be preserved by the trustees until the next annual meeting of the association, but the result shall be published in the *Journal* when the count shall have been completed.

The resolution was adopted.

Dr. J. Cochran read the report of the Committee on National Department of Public Health, which on motion was adopted, the committee enlarged to include a member from each State, and continued:

Dr. Senn, Chairman of the Committee on President's Address, presented the following resolution:

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ORIGINAL ARTICLES.

ASEXUALIZATION IN THE PREVENTION OF CRIME.

BY G. FRANK LYDSTON, M.D.,
OF CHICAGO;
PROFESSOR OF SURGICAL DISEASES OF THE GENITO-URINARY ORGANS AND SYPHILOLOGY IN THE CHICAGO COLLEGE OF PHYSICIANS AND SURGEONS; FELLOW OF THE AMERICAN ACADEMY OF SOCIAL AND POLITICAL SCIENCE.

AMONG all of the advances in sociologic science which may fairly be attributed to modern scientific medicine, nothing is more prominent than the philosophical treatment of the crime question. The attempt to reduce criminology to a rational and materialistic basis has constituted a great step in advance—one which marks a distinct epoch in scientific sociology. The science of criminology is comparatively new, and its study, in this country particularly, has only recently become popular. But it is my impression that just at the present moment the study of criminology needs to be saved from some of its over-enthusiastic friends and from the misdirected zeal of certain *dilettante* scientists and alleged criminal anthropologists. The second exception which I would take to the trend of scientific thought upon the crime question is that we are too much concerned with the criminal of to-day or the cure of the individual criminal, rather than with the very remote conditions which produce criminality in him, and which conditions will inevitably produce criminality in his descendants, as well as in many individuals who are more or less remotely related to his criminal stock.

In the consideration of the theme which I take the liberty of presenting herewith, it will be necessary to indulge in some general considerations of the causes of, and remedies for, crime. In the first place, the proposition is advanced that society is responsible for its own criminals, and in a less degree for its paupers, inebriates, and insane. These are the flotsam and jetsam of the social stream. They are, so to speak, the excreta of society, the retrograde products of social metamorphosis, bearing the same relation to the social body that certain excrementitious products of physiological metamorphosis bear to the animal body. The sources of these products should be considered, and the aberrations of the social body which produce them corrected, else no measures of repression of resultant evils are likely to be successful. I believe that the conditions producing these excrementitious social products are more amenable to measures of correction, and less inevitable, than what I have presumed to term the analogous conditions in the human body. In the case of the animal body, we are aware that certain excrementitious products of physiological change are absolutely necessary. We, however, deny the necessity of allowing these products to remain in the animal body and contaminate it or be placed in a position to injure other animals after discharge from the body. Is not the same true with regard to the social body? All of the conditions which produce the criminal class are furnished by society. Society's method of cancelling its debt is to punish the criminal after he has arrived at a point at which he menaces the safety, comfort, and commercial interests of society. At no time before, is cognizance taken of the results of the poisonous stream of criminality as it sweeps through some particular part of the social system, and an attempt made to correct them. Is this logical? Would it not be far better to turn the stream harmlessly aside, dam it at its source and antidote its contained poisons, if such a course be possible?

Society begins its self-contamination at the marriage-license window. The foundation-stone of society is the matrimonial relation. Its assumption is the most important step that a human being can possibly take, and upon the conditions which surround it depends some of the most important interests of our social system. Taking this into consideration, and laying aside the interest of the individual, is it not surprising that no effort at the regulation, control, or supervision of the marriage relation is made by society? The license-window is a place where the honest citizen and the criminal, the sane and the insane, the diseased and the healthy, the pauper and the millionaire, the learned and the ignorant, may meet upon common ground—for the important consideration of $1.50. The criminal, the insane, the epileptic, the syphilitic, the consumptive, and the drunkard are legalized to go on producing their kind, the number of their progeny being limited

entirely by the sweet will and physical capacity of the individuals. That the product of the factory of degenerates set in operation by licensing such people, is a menace and a burden to society goes without the saying. Has society a right to protect itself against its own vicious offscourings? I believe it has. I think the time will come when it will be no longer possible for our army of degenerates to procure licenses to marry. *I believe that it should be, and one day will be, a crime for a person in the active stages of venereal disease to marry and almost invariably infect innocent persons.* There can be no greater crime against the individual than inoculation with contagious disease—a disease which, perhaps, may outlast several generations and carry affliction to unborn innocence.

I am well aware that sentiment is strongly against the regulation of matrimony, still, sentiment has been no bar to the demand for a license and for the performance of the marriage ceremony by the proper parties afterward. Why should it be a bar to demands for proper qualification on part of the prospective candidates for matrimony? To reduce the question to its ultimate by very material and substantial argument, society should govern matrimony upon business principles. It should protect itself against the danger and expense of breeding an army of paupers, lunatics, criminals, and diseased persons. A life insurance company which should be governed by sentiment, would not be very highly regarded from a business standpoint, nor would it be likely to endure. Why should not society handle this question from the standpoint of a huge co-operative insurance association?

The prospective criminal once born, what does society do to prevent his becoming a criminal? Practically nothing. The child of poor but honest parents, is allowed to run the streets and contract evil habits or vicious associations. Result, eventually a criminal or a prostitute in a large proportion of cases. The child with hereditarily criminal propensities is allowed to follow the same course. The diseased degenerate child, whose parents are unable to care for it, is allowed to be exposed to all manner of vicissitudes, and unless fortunate enough to be cut off by death at an early period, eventually becomes a burden upon the community. What is the remedy at present instituted for this condition of affairs? Society punishes the vicious child after a criminal act has been performed, and sends the diseased one to a hospital to be supported by the public after he has become helpless. Even today, the child who has committed its first offense is thrown by the authorities into contact with older and more hardened criminals—to have its criminal education completed. We have millions for sectarian universities, millions for foreign missions, but no dollars for the redemption of children of vicious propensities or corrupting opportunities, who are the product of our own vicious social system and should be the wards of the State. But this is expensive. Yes, possibly,—for the time being,—but within a few generations a diminution in expensive processes of law and of costly penal institutions, would make the plan a most economic one in the long run.

A very important factor in the development of the criminal class is the fact that crime seems to be quite profitable; that the gigantic swindler, if he be successful, wins a greater reward than thousands and thousands of honest laborers do collectively during the same period of time. Nor does he run as great risks to life and limb as the average laborer who is employed in mechanical pursuits. A single mine explosion destroys more lives, injures and cripples more men than are executed by law, or injured in the pursuit of criminal occupations in half a century. The average professional thief gets more comfort and luxury and loses less time from his vocation than the average laborer.

That both moral persuasion and punishment have given but little result in the suppression of crime in times past must be admitted. The proportion of crimes to the population has varied comparatively little in the remote past. Statistics tend to show at the present time that crime is increasing. According to a report made at a recent meeting of the Medico-Legal Society of Chicago, a comparison of the census of 1850 with the census of 1890, shows that the population has increased 170 per cent., while the proportion of criminals has increased 445 per cent.

Preaching, while all well enough in its way, has accomplished even less than punishment. This is especially true with the criminal of the habitual type. I do not claim that this failure is due to the intrinsic fallaciousness of moral methods of persuasion, but the individual with a degenerate brain, who is possessed of absolutely no capacity for moral impressions, is poor material upon which to work. As outlined in the report to the Medico-Legal Society already alluded to, the habitual criminal is an abnormal man; this abnormality manifesting itself (1) physically by stigmata in cranial and cerebral development; by criminal physiognomy; by anomalies in the muscular, respiratory, and circulatory systems; by anomalies

in motor activity, and in physical sensibility; and (2) psychically, by moral insensibility; by a lack of forethought, by a low grade of intelligence; by vanity; by emotional instability, and by slang (thieves' jargon).

In the consideration of such a vital question as the management of the criminal class, the sentimentalist and his natural ally, the preacher, have joined hands on the question, and to them the world has looked for the reformation for which it has waited in vain. Such practical treatment as the question has received has been chiefly in the direction of devising ways and means to punish the criminal, the building of penal institutions and scaffolds, with the expensive law machinery which leads thereto. And then society has set about devising ways and means to save the elect from its own laws, and has split hairs to such an exceeding degree of fineness that there lies between the thieving corporation or the absconding millionaire, and the petit larceny fellow, who steals to live, an impassable gulf, one at least, across which Mammon alone can build a bridge.

Society makes crime; manufactures its own criminals, and winks at the violation of its own laws in high places. It gives the criminal all facilities; the best of inducements for carrying on his avocation, and then threatens to punish him if he follows the path cut out for him. Above all, society gives the criminal a chance to breed. Crime, as I have said, seems to be more profitable, safe, and comfortable on the average, than honest labor. What have our preachers, moralists, sentimentalists, and law-makers accomplished? They have spent the energy and money of the people for nothing. Every penal institution, every expensive process of criminal law, is a monument to the stupidity and wastefulness of society—an expenditure of money and energy to cure a disease which might be largely prevented. We have millions for courts of law and penal institutions, but nothing for the salvation of the children of to-day, who will be the criminals of the future. The first and worst injury that society inflicts upon the criminal is, allowing him to be born. The criminal has a good and just cause against us.

The principal remedy for the conditions which tend to manufacture criminals out of young children, consists in making them wards of the State, where it shall be shown that their parents are unable or unwilling to care for and educate them properly, or where it shall be shown that the children are vicious, either personally or in association, and above all, in cases in which the children are of criminal parentage. *The management of these children should begin before they commit criminal acts.* They should be taken charge of and placed in suitable institutions in which physical, as well as intellectual and moral training are followed. The first duty of the State to the degenerate, is to make him a healthy individual and give him the physical capacity necessary to enable him to become a useful citizen. If the child is exposed to evil influences and sources of corruption, it is the fault of our social system, and one which should be corrected. Good morals should not be expected from diseased children. The moral sense is the product of a healthy brain, and to be health the brain must be fed with good blood, a condition which is not possible in the case of the young waifs or neglected children whom we see about our streets. That physical and moral training is beneficial, is shown by the records of the Elmira State Reformatory, the results of which have been phenomenal. If so much can be accomplished in such an institution, which is distinctly reformatory and to which children are only sent *after* they become offenders against the law, how much more effective might the same system be, if used as a method of prevention in the case of children who have not yet become criminals?

The adult criminal must be separately considered. He is thoroughly developed in his criminal propensities; his organization, such as it is, is complete, and in by far the larger proportion of instances it is impossible to bring about moral reformation in him. Punishment rarely cures; there must be some radical fault in the system, else we would not obtain such meagre results.

Criminals should be confined to institutions in which proper physical and intellectual training are brought to bear, and in by far the smaller proportion of cases excellent results may be obtained, and when it is believed that a cure of criminal propensities in this relatively smaller number of criminals has been brought about, they should be released upon parole, but should still remain the wards of the State for a certain length of time. The duration of sentences should depend mainly upon the question of cure rather than upon the enormity of the original offence, the exception to this being certain cases of murder and the crime of rape.

Habitual criminals, certain murderers, and rapists, should be emasculated. This serves three purposes: (1) The rational punishment of the individual. (2) A powerful moral influence upon

other and prospective criminals. (3) The criminal is prevented from perpetuating his kind.

Something like twenty-five years ago Dr. Gideon Lincecum of Texas, a very able physician and a scientist known all over the world, appeared before the Texas Legislature and ably advocated the substitution of castration of criminals for capital punishment. The result was that he was set down as a crank, while a howl of derision and disapprobation arose all over the land. By some this general protest was accepted as an argument —however, like all of the subsequent objections which have been advanced, it was based entirely upon sentiment. Dr. Lincecum's plan is now being advocated in many quarters, not as a substitute for capital punishment alone, but as a method applicable particularly to habitual criminals and rapists. Most of the opposition which is now being exhibited toward the plan is of a sentimental nature. As an illustration of this sentiment, a recent address upon the subject before the Medico-Legal Society of Chicago by a prominent practitioner of law in this city, was excellent. Natural as sentiment may be in certain quarters, it is remarkable that a practitioner of law, and a man of standing in his profession, should come before an enlightened medico-legal body and protest against what would inevitably be a great step in sociological progress, and protest upon sentimental grounds. I do not oppose sentiment in general, but sentiment applied to sociological problems is—well, it should be a back number; it certainly is misplaced.

There is one feature of castration which makes it far superior to capital punishment in most cases. Executions do not punish, and are but an evanescent lesson to others. A few castrated murderers, habitual criminals, and rapists scattered throughout the community, would be most efficient aids to the criminal memory.

Oliver Wendell Holmes once said: "If you want to reform a man, begin with his grandfather." I offer as an amendment that if you want to reform the criminal, castrate both his grandfather and grandmother. There is but one substitute: Take the children of to-day, who will be the grandfathers of future generations and make useful citizens of them. And yet, this failing, asexualization comes into play.

A legal gentleman who spoke in opposition to the proposed method before the Medico-Legal Society of Chicago referred to the viciousness and savagery of the eunuch of the East as an illustration of the danger of castration. Before he makes any deductions from the characteristics of the eunuch, he must compare him with the race from which the eunuch sprang. I presume that castrating the "Ahkoond of Swat" would not have produced a nineteenth century dude. The Oriental eunuch comes from a race of savages. The Amazons of Dahomey are not only savages, but after being made practically neuters, are trained by savages for savage deeds. Another point: they are castrated young and trained afterward. We are advocating the castration of the adult criminal only. The result will not be the development of savage instincts in the criminal, but if the experience of countless generations goes for anything, the operation will be likely to tone him down to a marked degree. That this gentleman was absolutely wrong is shown by observations of animals and by thousands of cases of castration in the human subject. The emasculated choir-boys of Rome did not develop bloodthirsty instincts. There is not a practising physician who does not know of dozens of women who have been asexualized for the relief of ovarian disease, yet where is our Amazonian army?

In conclusion, I desire to say that the advocates of castration demand it—not for all criminals, but for habitual and incurable types, for rapists, and possibly for some murderers. As far as the latter are concerned, their execution is useless. Let them choose between scientific experimentation under anesthesia, and castration. They might expiate their crimes by benefiting scientific medicine. As for capital punishment, away with it!

With regard to sexual crimes, asexualization is of very practical importance to the people of the South, among whom such crimes, particularly on part of the ignorant Southern negro, is of especial frequency. This was one of the important points brought out by the discussion before the Medico-Legal Society. It is to be understood, however, that the discussion of this subject applies to all sexual criminals of whatever color; the negro criminal of the South is especially considered, because he has been very prominent, not only with reference to the frequency of the crimes which he has committed in this direction, but because of the barbaric treatment which he has received in certain communities as a method of punishment. In response to a request made by my friend, Dr. Hunter McGuire of Richmond, Va., I made an exhaustive discussion of this subject several years ago in a paper which I then published. I called attention to the futility of lynching and legal executions or imprisonment.

Nowhere in the history of civilization has the futility and barbarity of capital punishment been

so well shown as in the punishment of negro rapists in the South. The negroes who perform the acts under consideration are the lowest and most ignorant of the race. They cannot read the newspapers, and it is conceivable that a negro may be hanged or burned at the stake without the negroes of the adjoining county becoming apprised of it. The lower-class negro is subject to attacks of *furore sexualis*, which completely remove any inhibitory impressions which he may have received, even though in his rational moments he knows that swift and terrible vengeance will be meted out to him for the crime of rape. He is usually a religious fanatic who sees the gates of Heaven yawning wide to receive him just beyond the scaffold. Those gates are ever hungry for the fruit of the gallows-tree, and your negro fanatic needs no priest or clergyman to bid him *bon voyage*. The Zulu crops out in his not very remote descendant on such occasions. Death is no punishment, and its moral effect is but transitory on those about him. What a rapist needs is an ever-present object lesson, and one which puts the criminal beyond the power of further criminal acts of like nature.

A negro clergyman of education, in commenting on my paper on this subject, said: "The conceded superiority of the white race has much to do with rapes committed on white women by the negro. Art, literature, and religion combine to inflame the passion of the negro for white women. Your fairies, nymphs, goddesses, and angels are all white. Did you ever hear of a black angel? The result is an inflamed passion and an exaggerated curiosity on the part of the negro."

It is my opinion that a few castrated negroes scattered throughout the South would do more good than a multitude of executions. The colored clergyman whom I mentioned, suggested that the offender's ears should also be cropped, that he might be easily recognized.

I repeat, I do not indorse this method as applicable to the negro rapist alone, but to all criminals of that particular type.

In one of the papers read before the Medico-Legal Society mentioned, a distinguished student of the subject became a trifle sentimental over the case of a boy of seventeen years of age, who was committed for killing a policeman—"his first killing." This boy behaved well for several years, and the author of the paper said "he was cured." Cured of what? He never *was* a professional murderer. His was a sporadic case of criminality and one in which it is impossible to say that the same conditions would not lead to another murder. No matter how well behaved, that boy was probably still dangerous. From an extensive experience, I am free to say that convicts doing time for murder are nearly always well behaved. First, because their crimes were committed in most cases under exceptional conditions of excitement. Second, good behavior affords the only hope of men who are not imprisoned for a definite term, but who may at some time excite the pardoning sentiment in somebody or other. Beware of well-behaved murderers unless there be something more than good behavior as an evidence of cure. Repentance is, of course, no evidence—they are nearly *all* repentant. Understand, I believe that quite a large proportion of murderers might be liberated without danger, but I simply desire to call attention to the difficulty of deciding this point. Your sporadic murderer may be "cured" until such time as certain sources of excitement control him. *He is much more difficult of analysis than the habitual criminal.*

The author of the paper to which I allude also suggested a board of medical examiners to diagnose the grades of criminality and decided upon appropriate measures of treatment. Now, this is all very well in theory, but will it work? Who shall form the board, how shall they be appointed, and upon what absolute data shall they form a diagnosis? I firmly believe that the existence of such a board for six months would, with the meagre data at our command, bury the science of criminal anthropology so deep that it could never be resurrected. Let us rather bear those laws we have than fly to boards we know not of,—that would make confusion worse confounded. No, a board of diagnosis of crime would be a dangerous thing. Let us concern ourselves with the conditions that produce the criminal and the best means of cure.

It has seemed to me that we are working at a disadvantage by considering the criminal of to-day as being the most important factor in the crime problem. I repeat—Dr. Oliver Wendell Holmes voiced the central idea when he advised us to reform a man by beginning with his grandfather.

The repression of the criminal class is a question which should be dealt with from a practical standpoint. Sentiment, if exhibited at all, should be in behalf of honest people, not the criminal. The maudlin sentiment which impels fashionable women to present bouquets and frosted cakes to imprisoned criminals may yield to the pressure of the new method of criminal correction. Like all

other diseases the disease of crime is one which is more rationally treated by prevention than by curative methods. Will not the law-maker join hands with the medical practitioner and endeavor, even at the sacrifice of his own interests, to prevent the diseases which he treats?

BRAND TREATMENT OF TYPHOID FEVER.

By ARTHUR J. PATEK, A.B., M.D.,
OF MILWAUKEE, WIS.

In an article entitled "Hydrotherapy in Typhoid Fever," that appeared in the Medical News of February 8th, Dr. A. L. Benedict, of Buffalo, casts such discredit upon the efficiency of the Brand Treatment, as it is systematically employed at the present time in all modern hospitals, that I beg permission to say a few words in its defense. I would not have it understood that this treatment is but a theory still groping about for advocates and defenders. It has enough able supporters. And it is my desire merely to refute some misleading statements and arguments made by Dr. Benedict, which unanswered, would be prejudicial to the best interests of the method. I shall also take this opportunity and privilege to elucidate a few points in regard to the Brand treatment—based upon facts, not upon theories.

If the writer had studied carefully the reports of Dr. Baruch, those recently published by Professor Osler in the Johns Hopkins' Hospital Reports, and the annual records of typhoid fever cases occurring at the German Hospital of Philadelphia since 1890, and a more recent record of such cases at the Pennsylvania Hospital, reported in the Medical News by Professor J. C. Wilson, some of his statements of condemnation would not have been made. Since Dr. Benedict has based his conclusions wholly upon theoretical grounds and argues from analogy only, it is but fair that a word should be spoken, based upon a foundation of facts without the fallacious use of analogy, in support of the argument. I will, therefore, confine myself to facts as they have been elicited by observation.

Like Dr. Benedict, it has also been my good fortune to frequently watch others of both sexes and all ages enjoying the sport of bathing and swimming at bath establishments and watering places, and I must say that it is my impression that exactly those youngsters who went in swimming, twice or even thrice daily, for the love of this sport and not because a cruel doctor had so ordered, were the hardiest of boys, and that this excess did not result in "diminished strength, lagging at games, and other athletic exercises, loss of appetite, predisposition to cold, transient dyspepsia," etc. I too have often noticed boys with "livid or almost white lips" and boys whose lips and skin were purplish-blue after coming from an open-air bath, but can also recall that these were the boys who were the most inactive while in the water and were content to stand shivering, with arms folded, in water waist-deep, and watch their more lively companions sport about, keeping up a good skin circulation and "working up an appetite." These latter went into the sport for all it was worth—and it was worth a great deal to them—and they came from the bath with a ruddy, glowing skin; the former went in swimming merely to join their fellows, and they are the ones who emerged from the bath with livid or blue lips.

It is quite evident that Dr. Benedict is judging, as I think fallaciously, from observations made upon the supposedly healthy, and not from any experience he may have had with typhoid fever patients, and is placing these *a priori* arguments to the credit or discredit of diseased states.

There are two points upon which Dr. B., who has evidently not had the privilege of coming in direct contact with typhoid patients, before, during, and after immersion treatment, needs information. Firstly, the technic of the bath procedure. Secondly, the effects of such treatment, from which latter we shall deduce the indications for its application.

As to the technic, I may state that the patient, while in the bath, is never for a moment supposed to be lying in the cold water, an inactive, shivering, helpless mass of humanity. Far from it: he is encouraged to rub himself and an attendant also applies friction, and thus superficial circulation is kept up, there is not the danger of internal congestion, and the patient emerges from the bath, not blue, but red as to his skin. The whisky before or during and after the bath is a very necessary adjunct to the treatment.

Now, let us see how the patient's condition in the bath differs from that before immersion. He may have been somnolent and delirious; now he opens his eyes, seems to recognize his surroundings and may even answer questions rationally. His respirations may have been shallow and frequent; now he breathes more deeply, hence more efficiently, and less frequently. His pulse may have been feeble and have registered 140 beats per minute; now it is more forcible and registers 110 or less.

What are the very evident deductions from these facts? (That they are facts anyone can satisfy

himself by a visit to a hospital in which this treatment is used). We must conclude that the bath fulfils several indications, and although Drs. Wilson, Osler, and others have at different times endeavored to emphasize that its antipyretic action is of the least importance, yet physicians are continually falling into the error of classing the cold bath as synonymous with antipyrin and quinin. The indications to be fulfilled are : stimulation of superficial circulation and cutaneous excretion, stimulation of general circulation and respiration, sedative action upon the nervous system, and lastly, reduction of temperature. I would not be considered going so far as to say that the happy results cited always attend the cold bath, though sufficiently often to impress an observer forcibly. And I would beg Dr. Benedict to read carefully not only the statistics of Drs. Wilson and Osler, but also the text in which these records are very thoroughly explained and in which contra-indications to bathing are mentioned.

Osler, in the Medical News of October 12, 1895, says: "Two advantages are claimed for hydrotherapy in typhoid fever; a mitigation of the general symptoms of the disease and a reduction in the mortality. Our experience during the past five years bears out these claims." And again: "As has been urged so often and so ably by many writers, the beneficial action is not so much special and antipyretic as general tonic and roborant."

In conclusion let me summarize by a refutation of several of Dr. Benedict's propositions:

Proposition 1. That "immersion rarely fulfils the requirement of an antipyretic, producing the least shock," etc., is quite as untrue to fact as

Prop. 2. That "occasionally an antipyretic drug, such as acetanilid, phenacetin, phenocol, or lactophenin may be used" is dangerous in practice.

Prop. 4. "The blood is thrown inward to organs already infiltrated," etc., and

Prop. 6. "The immediate effect of cool immersion is to cause congestion of the internal organs." Hypostatic pneumonia and other internal congestions are rarely encountered when patient is subjected to systematic, properly conducted bathing. The establishment of a good superficial circulation militates against this danger.

Prop. 14. That "the typhoid patient has not the benefit of exercise during or after the bath nor of increased circulation and respiration inevitable in the effort to keep the nose above the surface of the water" is not in accordance with facts, as is explained above.

Prop. 15. "The typhoid patient, if immersed at all, must be lifted to and from the bath with the greatest care," etc. This is done in all well-conducted hospitals.

Prop. 17. "In a comparison of death rates the advocates of immersion very properly exclude fulminating and neglected cases from their own tables," etc. This is certainly a perversion of facts, as a glance at the tables of Wilson and Osler will show. The percentages are drawn from all cases treated and these are then further analyzed.

Prop. 23. "We may well doubt the good faith of some who practice immersion in hospitals but who do not urge it on their private patients," etc. It is impossible to overcome sentiment. Does it follow that the inunction treatment of syphilis, which is now universally conceded to be the most efficacious, but can rarely be applied in private practice, is by reason of this the less worthy of good faith ? The Brand Treatment is no longer a theory, nor are its advocates clamoring for the recognition or introduction of an experiment. They are dealing with facts.

Those who study carefully the rules laid down for the application of the Brand treatment and take the trouble to follow the well-tabulated records of careful, conscientious men, will surely be convinced that the immersion treatment of typhoid fever has a *raison d'être*, and that, in taking in good faith what is claimed by these men, they will be following, not a blind trail, but a path well-paved by keen observation and mature judgment.

CLINICAL LECTURE.

RETINITIS AND CHOROIDITIS.[1]

By L. WEBSTER FOX, M.D.,
OF PHILADELPHIA;
PROFESSOR OF OPHTHALMOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE.

Gentlemen: I wish to recapitulate part of our lecture of last week in which I called your attention to the differential diagnosis between retinitis and choroiditis. You were told that retinitis seldom occurred idiopathically but was usually the result of some constitutional disturbance, and at the head of these disturbances syphilis heads the list. I called your attention to the fact that in all cases where you do not have a specific history and where the vision has fallen below the normal and the ophthalmoscope fails to show you any pathological change in the retina, you should always test the urine for albumen.

So as not to mislead you relative to the frequency of retinitis following syphilis or albuminuria, I might say that in syphilitic retinitis we usually have other tissues like the uveal tract, choroid, and ciliary bodies and iris com-

[1] Delivered at the Medico-Chirurgical Hospital, February 28, 1896.

plicated, whereas, in retinitis, due to albuminuria, we have the retina alone affected. I wish to repeat that we also have functional disturbances which do not always correspond to the ophthalmoscopic signs. You may remember the patient whom I brought before you early in the session. This patient has suffered the most intense agony from retinitis, yet the ophthalmoscope reveals nothing. In spite of the most active treatment, both externally and internally, she is still blind, although no change in the tissues of eyeballs are apparent.

Then again we have various forms of retinitis, such as the toxic amblyopias, in which vision is seriously interfered with and no morbid changes occur in the retina. In these cases there is no pain whatsoever. I have had several cases wherein young children varying from the ages of eight to fourteen the vision has fallen to $\frac{1}{200}$ and the visual fields contracted to ten degrees. This form of retinitis is extremely rare and is evidently associated with a lowering of the nervous system. Under the active use of the constant current the vision has returned to normal in a very few weeks. In these cases the ophthalmoscope shows no change in the fundus oculi, and the amblyopia is not due to toxic influences because these patients were children and hence were not addicted to drugs of any kind. The most important form of retinitis which interests the general practitioner is that caused by Bright's disease. The eyelids are to him as characteristic as the fan-shaped white spots to the ophthalmologist.

Edema of the lower eyelid is a very characteristic symptom of Bright's disease. Associated with this puffiness of the eyelids we find the muscle of accommodation giving way. This condition shows more with hyperopes, suffering from retinitis than myopes. It is a singular fact that in certain forms of retinitis, both in the hemorrhagic and colloid variety, we fail to detect albumin in the urine. From observations which I have made, but have not been able to confirm, I feel that in certain forms of retinal hemorrhage, especially in the striated variety, we have the forerunner of non-albuminuric Bright's disease. Then again, we have the typical colloid deposits in the retina, vision fallen off to $\frac{10}{200}$, or even less. These white spots, sometimes as small as a pin head, or as large as a canary seed, are grouped together fan-shaped or like a sunburst. Even with such a picture you may fail to confirm albuminuria. Many of you will recall such a case, a young woman who came to the eye department some months ago for loss of vision in one eye. The ophthalmoscope revealed the picture, as shown to you on this painting, of a so-called case of albuminuria retinitis. To the students who were present at the examination I stated that the case was one of undoubted Bright's disease, and that the urine would show albumin in large quantities. Strange to tell you, the examination did not confirm what I had predicted. No albumin was found at this or subsequent examinations. The patient came under the care of Dr. S. Solis Cohen, to whom I sent a report of the ophthalmoscopic examination. Dr. Cohen could not detect any abnormal secretions in the kidneys during the time the patient was under his care. A week ago I examined the eye-ground again, and all traces of the retinitis had disappeared and the vision had returned to the normal. I believe, with Mohomed, that we have a functional stage of Bright's disease, and that it shows itself first in the retina, as a retinitis, high arterial tension, and when this condition exists for a longer or shorter period we have the colloid deposit, or even the retinal hemorrhages, and after this the change in the kidneys.

While on this topic of retinal deposit I must call your attention to the fact that in diabetes mellitus, which is a rare complication, we have a similar deposit in the retina, and it is almost impossible to detect one from the other by means of the ophthalmoscope alone.

This young woman, whom I present to you to-day, has a form of retinitis entirely unlike that about which I have just spoken. In examining her eyes externally you see nothing the matter; good movement, good color, bright and clear. She is, however, practically blind. She can walk about the arena fairly well. Upon testing her distant and near vision she was about one-fifth the normal, but when we test her visual fields they are contracted to almost nothing. As she expressed it, apparently her "eyeballs have grown very small, or as if she had two long tubes placed before her eyes, and as long as she looks straight ahead she can get along." In examining both eyes with the ophthalmoscope, we find the back of the eye covered with a deposit of black pigment, very marked in the periphery, less so at the equator, and little or none about the macula. It is exactly like this drawing, a picture not easily to be confounded with other deposits in the fundus. These masses of brownish pigment are very similar to the lacunæ and canaliculi of bone. At the periphery the deposit is *en masse*, while in the central portion of the eye-ground we have isolated plaques. One very characteristic point in this deposit is that it surrounds the blood vessels like moss about the branches of trees, and finally these blood-vessels become so contracted that they are scarcely visible. I have not seen this deposit earlier than the eighteenth year. In this patient there is contraction of the visual fields. As the patient advances in age the deposit increases, and as it does the visual fields grow less and the nyctalopia grows worse; ultimately blindness follows.

The woman before you is forty-two, and if we could get an accurate history, I am sure that her defect of vision would date back to about her twentieth year.

As to the cause of this disease, heredity has a great influence, and I believe that consanguineous marriages are responsible for this evil more than we like to admit. As the result of an intermarriage of first cousins I had under observations fifteen descendants suffering from retinitis pigmentosa.

As regards the treatment I am convinced that the constant current is the only means at our disposal which amounts to anything. It must be kept up for years. It seems to prevent progression, and in some cases I have seen marked improvement in the visual fields and central acuity. The cases under thirty years of age respond more promptly than those of maturer age. This patient has had daily treatment under the care of Professor Burr. She shows evidence of an appreciable improvement.

She, however, is unable to remain in the hospital any longer, and therefore will pass away from our care and her fate may be easily forecast.

The choroid, consisting of six layers, is second in importance of the coats of the eye. It is the blood-carrying coat, and from its pigmentation plays a very important rôle in the protection and aid to our vision. When the pigment is entirely absent, as in the case in albinos, there is great difficulty in seeing.

This coat, or uveal tract, as it is also called, is very prone to localized or general inflammation. It may be serous, plastic, or purulent. The symptoms in serous choroiditis are not well marked. The ophthalmoscope shows a turbid condition of the vitreous lying close to the retina with foci of exudation here and there over the choroid. In this stage of the disease it is very difficult to differentiate between retinitis and choroiditis. The vision is clouded and may remain so during the inflammatory stage. A patient will frequently complain of phosphenes, and spots before his eyes, during this stage. If we have large areas of exudations and they become absorbed, we have very defective vision, and here or there in the visual field scotomata, or blind spots. The choroid coat has a moth-eaten appearance.

We recently followed a case like this: A woman referred to the clinic by Dr. W. S. Stewart, who had a marked case of serious choroiditis. There was a history of sudden dimness of vision in the left eye. I examined the patient very carefully and could only find an area of haziness in the posterior part of the vitreous chamber. Some of you who were present at the examination may remember the patient. At the end of forty-eight hours the haziness had not increased but a focus of exudation was seen just below, and about the size of the optic nerve. This condition was about the same for two weeks when this island of deposit began making its appearance, which grew darker and darker until it became black. In five weeks this spot of choroiditis had the appearance of being there for years.

The case that I have described is, I believe, the most common variety and causes the atrophic spots so characteristic of choroiditis as we see them with the ophthalmoscope.

Plastic choroiditis is very serious in its outcome. Beginning with a sudden dimness of vision, throwing out deposits of lymph, breaking down of tissue until the eyesight is gone, and the ultimate softening of the eyeball. Fortunately, these cases are not very common. Between this disease and purulent choroiditis there is very little difference. In the latter disease the conjunctiva and subconjunctival tissues are densely infiltrated with serum. There is great pain, and the eyeball fills with pus and we have a case of panophthalmitis.

You have seen in the out-patient department quite a number of cases of disseminated choroiditis. Scattered over the fundus isolated spots, small in area, almost perfectly round, some few oval, white in the center and a reef of black pigment around them, is the picture which is so characteristic of the disease due to syphilis.

We have recently had quite a number of cases of choroiditis circinata, usually found in old people. I believe this is associated with senile degeneration and has no relationship with kidney changes.

The macula region is frequently the seat of an inflammation which shows itself in punctiform deposits but circumscribed and limited to this region. The vision is more or less affected in this form of disease.

Some years ago I had a patient in whom there was a sudden loss of vision of his visual center. Upon examination I found a small, brownish-red hemorrhage in the maculæ, both were perfectly circular and in due time became absorbed. This young man, who is living in the city, has had no further recurrence, but his central vision never became as acute as before the hemorrhage.

In progressive myopia we have more or less change taking place in the choroid. This becomes more marked about the optic nerve entrance than elsewhere, but sometimes this change takes place over the whole eye-ground as is demonstrated in the patient I now bring before you. He comes from the western part of the State, where, until recently, he has been attending a literary college. For years he has worn glasses, near-sighted ones. While his vision was never up to the standard, yet he was able to follow his work. Recently he lost the power of reading small type and his visual fields also became so limited that he is practically blind.

Upon examining him in the dark room I found most extensive spots of choroiditis, in fact, almost complete atrophy of the choroids. To those students who were present at this examination I called attention to the great changes which had been going on, also to the fact that the retina too was undergoing an atrophic change. The retinal blood-vessels were attenuated and passed over the white spots in the choroids. In quite a number of places the vessels were seen in the sclerotic coat.

The conditions here are most grave. Under the guidance of a skilful ophthalmic surgeon this young man should have been relegated to an out-door life and should not have been permitted to have studied from books. The prognosis is very unfavorable and the only hope that we can hold out toward aiding his vision, is preventing him from using his eyes for small type, living an outdoor life, and trying to stimulate the shreds of the choroid and retina still remaining by the constant current and such internal remedies as will preserve the normal tissue.

This case was one of progressive myopia in which the choroids became involved and blindness followed. As ophthalmic surgeons, such cases will come under your care, and you must always guard the patient from too much near work. If the progression is rapid you must make the patient leave off near work for several years. The younger the patient the more unfavorable will be the ultimate outcome.

The general treatment in cases of choroiditis must be towards the dyscrasia, and when errors of refraction exist you must correct them, and urge upon your patients the necessity of frequent examinations both with the ophthalmoscope and for new glasses.

CLINICAL MEMORANDA.

VERTIGO OF NASO-PHARYNGEAL ORIGIN.[1]

By W. SCHEPPEGRELL, A.M., M.D.,
OF NEW ORLEANS, LA.;

REFLEX disturbances due to pathological conditions in the nose have been frequently reported, but the naso-pharynx, except in cases of hypertrophy of the pharyngeal tonsil, has not often been found to be an etiological factor in reflex disturbances.

Vertigo of laryngeal origin is sometimes met with in practice and I have had occasion to see several cases of this interesting form of neurosis. Headaches are occasionally due to a catarrhal condition of the post-nasal cavity, but the following case, in which vertigo was induced by a retro-nasal catarrh, is certainly a rare instance in rhinological literature.

On May 13, 1895, Frank S., age twenty-four years, was referred to me by Dr. John B. Elliott; he gave the following history:

For several years past he has suffered from "catarrh," but for the last two years, while making an attempt to clear his throat (naso-pharynx) after breakfast, he gags and becomes dizzy and has to take hold of a chair or other article to prevent himself from falling. The vertigo is sometimes very severe, and on two occasions he completely lost consciousness. The first time this occurred he was in his room and, while making an effort to clear the naso-pharynx of secretion, he fell and remained unconscious until his relatives, who heard the noise of his fall, came to his room, a period of probably two or three minutes. On the second occasion he fell in the street and did not recover consciousness until he had been assisted to his feet by some passer-by.

Recently he has also had great pain over his right eye, for which a physician had prescribed phenacetin, and the patient has acquired the habit of taking this now in large doses. One physician whom he consulted treated him for urethral stricture without, however, any improvement of his symptoms. He then called on Professor Elliott, who at once recognizing that the symptoms were due to some pathological condition in the nose or throat, referred the patient to me.

A rhinoscopic examination showed a cartilaginous thickening of the septum into the right nostril and a hypertrophy of mucous membrane, causing marked stenosis of this passage. The naso-pharynx was in a state of chronic inflammation and covered with a thick secretion, due to the defective respiratory function of the nose.

With a view of improving the nasal respiration and to prevent the occlusion of the opening into the right frontal sinus, which was evidently the cause of the pain in the supra-orbital region, the septal thickening was removed and the hypertrophic condition of the mucous membrane reduced by the electro-cautery; an alkaline wash was prescribed so that the patient could cleanse the nostril and naso-pharynx.

The patient began to improve as soon as the treatment was well advanced. The pain over the eye ceased, and with the improvement in the nasal respiration the naso-pharyngeal irritation disappeared. Eight months afterwards the patient reported that he had had no recurrence of either the vertigo or the pain.

[1] Read February 12, 1896, at the meeting of the New Orleans Parish Medical Society.

EXAMINING RECTAL MUCUS FOR TUBERCLE BACILLI, A USEFUL DIAGNOSTIC PROCEDURE.

By JOHN P. SAWYER, A.M., M.D.,
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PROFESSOR OF MEDICINE AND CLINICAL MEDICINE, WESTERN RESERVE UNIVERSITY; VISITING PHYSICIAN TO ST. VINCENT'S CHARITY HOSPITAL.

CASES are continually occurring in which we suspect the existence of incipient phthisis, but in which, owing to utter absence of expectoration or to absence of *bacilli tuberculosis* in the sputum obtained, we are unable to demonstrate the correctness of our suspicions by ordinary routine measures.

This is notably true in primary renal and intestinal tubercular lesions. Examination of urine and of feces is of great assistance, but the search for bacilli in the stools is beset by obvious special difficulties, which prevent the routine examination in these suspected cases. The difficulty is all the more deplorable because there is reason to think that the intestinal route of infection is more common than has been generally supposed. Few observers now neglect to examine the secretion of *fistula-in-ano* or of ulcerations of the rectum.

It is not a far-fetched idea to make, in the cases suspected as above, an attempt to find whether or not the tubercle bacillus be present in the rectal mucus in numbers sufficient to be of diagnostic import. The finding of an occasional *bacillus tuberculosis* in the stool is held to be due probably to ingestion with food or drink or saliva; but the finding of clusters of these bacilli, particularly on the surface of formed stools, is of diagnostic significance, and can be relied upon to indicate tuberculous processes in the intestine, probably in the neighborhood of the ileo-cecal valve. With this in view, it is easy to see that in the passage of the formed stool through the sphincter, the mucus, in which are carried the bacilli from a locality higher up in the intestine, is partially held back, retaining here the sign of the destruction above, as well as the seed of fresh processes, whose later occurrence renders clear the existence of a condition suspected before, but now already well advanced.

In my service at Charity Hospital, during the past few months in three cases as above, the *bacillus tuberculosis* was found in the rectal mucus in considerable numbers when wholly absent in sputum, or when no sputum could be obtained, no local lesion being present to account for, or call attention to, tuberculous process at the anus. The mucus is obtained, after placing the patient in position to examine for piles and directing him to bear down as though at stool, by gently removing a little mucus from the everted membrane with a sterile loop and spreading it upon a clean cover-glass, to be treated exactly as sputum in

the ordinary examination. The use of a rectal speculum, while perhaps advantageous, has not been necessary.

Pending the results of farther trial in my own clinical material, and of control experiments, I present this note, with considerable confidence that others trying this procedure will find it an aid to early diagnosis in a class of cases where all hope of therapeutic efficiency lies in prompt recognition.

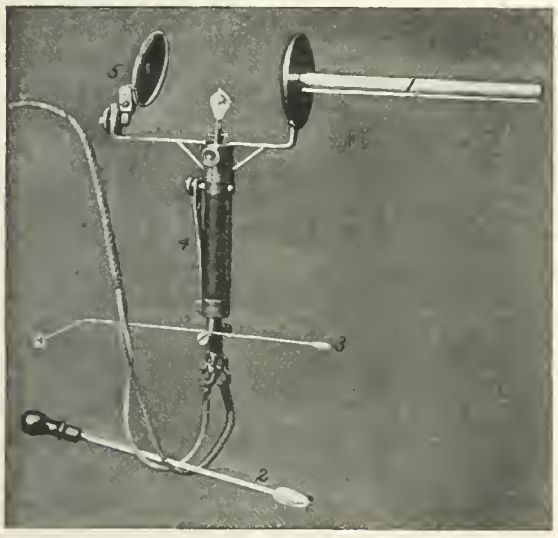
NEW APPARATUS.

A NEW URETHROSCOPE.

By JOHN A. HAWKINS, M.D.
OF PITTSBURG, PA.

THE instrument here shown is the result of numerous experiments on the part of the writer in this line and has given him more satisfaction than any other instrument tried. It has been in use for more than a year.

Up to the present time Leiter's instrument has had the preference and during its time served its purpose, but is very heavy and unwieldy. Another objection to it is that as the line of vision is over the top of the mirror, little more than one-half of the light thrown in the direction of the mirror can be utilized, owing to the removal of a segment of the mirror to complete the axis of vision.



HAWKINS' URETHROSCOPE.

Dr. Otis attempted to overcome this difficulty by devising his "Perfected" urethroscope, which consisted of a T-shaped tube, in the vertical portion of which was inclosed an incandescent electric lamp, whose rays were concentrated by a small "bulls-eye," placed in one end of the horizontal portion, and which was inserted through a Klotz tube. The objection I have found to this instrument is that as it is necessary to look over the condenser in using the instrument, the rays of light are not thrown directly down the tube but are thrown obliquely and the illumination is not only poor but the image is not properly defined.

The principle of the instrument here shown is that of the ophthalmoscope and consists of a Klotz endoscopic tube to which is attached by clamp a U-shaped bar. At the opposite end of the bar is placed an adjustable mirror, through the center of which is a perforation, as in the ophthalmoscope. This mirror is set in a ball-and-socket joint and is adjustable in all directions. It is also movable, either up and down or to and from the lamp. The source of light is from a small incandescent lamp, located at the top of the hand-piece, the hand-piece being movable in a vertical position in a tube on the U-shaped bar. A thumb-switch, commensurate to the requirements, is placed nearest the operator.

Completed, the instrument weighs but two ounces, and if made of aluminum, would weigh but a small fraction of an ounce.

The advantages I claim over the older instruments are: it is lighter and can therefore be handled with a more delicate touch. All the light thrown in the direction of the mirror is utilized, as all parts of the mirror are reflecting the light directly down the tube, while the operator's eye is in an optical axis with the object. There is plenty of room for the operator to make applications to the diseased mucosa. All Klotz' tubes are easily attached to the instruments, as with other instruments. The illustration in itself fully explains the appearance of the urethroscope. There is no reason why this same instrument is not applicable to the examination of the ear or other cavities if provided with proper specula.

MEDICAL PROGRESS.

Extra-peritoneal Uretero-Cystostomy, with the Formation of an Oblique Canal.—To obviate the dangers that attend the establishment of an artifical communication between the ureters and the bladder through the peritoneal cavity; in the correction of such conditions as uretero-vaginal fistula, WITZEL (*Centralblatt für Gynakologie*, 1896, No. 11, p. 289) proposes to detach the peritoneum and draw the fundus of the bladder toward the ureter, which is made to enter the bladder obliquely, as it normally does. In the case of a twenty-year old woman, with a uretero-vaginal fistula, in whom other measures had failed, this procedure was successfully carried out. After a median abdominal incision had been made, the posterior layer of the peritoneum was incised in the neighborhood of the divison of the iliac artery and the thickened ureter found. Through an incision at about the middle of the broad ligament the lower extremity of the ureter was found and divided between two ligatures. The distal extremity was then closed by sutures and dropped into the pelvis. By means of a long pair of forceps, introduced beneath the peritoneum on the side of the bladder above the innominate line and over the iliac fossa, the proximal extremity was drawn down. The wounds in the peritoneum, including the median one, were closed and the subsequent procedures conducted outside the peritoneum.

The bladder was now readily drawn to the middle of the iliac fossa, covering the exposed extremity of the ureter to the extent of an inch and a half, and fixed in this situation by means of several strong catgut sutures. Opposite the obliquely divided extremity of the catheter a small opening was made into the bladder, and the mucous lining of both was united by a ring-suture of fine catgut. Another series of sutures united the remainder of the walls. Parallel with and on either side of the ureter the wall of the bladder was elevated into folds, which were united by sutures, so as to surround the ureter for a distance of about an inch and a half. An additional opening was made in the abdominal wall for the introduction of a glass drainage-tube to the point of anastomosis, and the median wound was closed. A catheter remained in the bladder for four days. Union took place and function was restored without complication. A similar plan may be pursued in cases in which primary uretero-cystostomy is indicated.

The Transplanation of Tendons.—Franke (*Archiv für klinische Chirurgie*, B. lii, H. 1, p. 87) calls attention to the operation of Nioladoni for replacing the function of a paralyzed muscle by uniting the distal extremity of its divided tendon with the tendon of an unparalyzed muscle, and reports two cases and cites fifteen others in which this procedure proved efficacious. One of the cases was in a boy, six years old, who presented pes equino-varus as a result of a syphilitic encephalitis. After division of the tendo Achillis, the foot was strongly held in dorsal flexion and the tendon of the extensor longus digitorum severed, and its distal portion united by suture with the tendon of the tibialis anticus; the extremity being finally surrounded with a plaster dressing. The child, previously able to get about only with the aid of braces, was now able to run and play without artificial support. The second case was in a girl, five years old, who presented equino-varus as a result of an acute poliomyelitis early in life. An operation similar to that performed in the first case was done, with an equally satisfactory result.

Complete Resection of the Prostate for Malignant Disease.—Salitschew (*Vratch*, 1896, No. 2; *Presse Médicale*, 1896, No. 22, p. 131) has reported the case of a man, forty years old, who complained of intense pain referred to the rectum, and radiating toward the sacrum, the penis and the thighs, with hemorrhage from the bowel after each stool. On examination under anesthesia a diffuse tumor was found above the anus, and involving the rectum for a short distance. The overlying surface of bowel was ulcerated, especially in the region corresponding to the prostate. The seminal vesicles and the different canals were thickened and firm. In the depth of the ulceration, corresponding to the prostate, a catheter in the bladder could be easily felt. The glands of the pelvis, and of the inguinal regions, were not enlarged. A diagnosis of carcinoma of the rectum and prostate was made and confirmed by histologic examination. Accordingly, two-thirds of the rectum, the prostate, the lower portion of the seminal vesicles, and the adjacent lymphatic glands were removed. The superior third of the rectum was sutured to the posterior angle of the wound, a catheter fixed into the bladder, and the large opening packed with iodoform gauze. The wound slowly filled up and at the end of two months the catheter was removed, although a small fistula persisted. An ulcer formed over the sacrum and the patient died three and a half months after the operation. The *post-mortem* examination showed that death was due to a myelitis in a situation corresponding to the ulcer over the sacrum.

THERAPEUTIC NOTES.

Tannalbin is the name given by Gottlieb (*Deutsche medicinische Wochenschrift*, 1896, No. 11, p. 163) to an albuminate of tannin rendered insoluble in the gastric juices by being heated for five or six hours at a temperature of between 110° and 120°C., and yet slowly soluble in the alkaline intestinal secretions. The preparation appears as a pale-yellow powder, quite tasteless, and containing about fifty per cent. of tannic acid. Its clinical utility has been tested by v. Engel (*Ibid.*, p. 163) who employed it in forty cases of various forms of intestinal disturbance—catarrhal and diarrheal conditions—and found it to be an efficient intestinal astringent, possessing the usefulness of a tannic acid preparation without any ulterior influence upon the functions of the stomach. The drug was administered in powder form to adults in doses of 15 grains, and to children in doses of 7½ grains, three or four times a day, and preferably at intervals of an hour or two.

The Treatment of Symptoms following Oophorectomy.—The successful results obtained from the use of thyroid extract in the treatment of diseases dependent upon removal of the function of the thyroid gland has led Mainzer (*Deutsche medicinische Wochenschrift*, 1896, No. 12, p. 188) to employ a preparation of the ovaries of cows and calves in the treatment of the phenomena that often appear at the menopause, or in the sequence of removal of the ovaries for any purpose. In a given case the attendant symptoms, fulness of the head, palpitation of the heart, vertigo, flushing, and sweating, were relieved by the use of such a preparation, which was at the same time unattended with any unpleasant effect.

Hypodermic Injections of Iron for Grave Anemia.—In the treatment of grave anemia Menella (*Gaz. Herb. de Méd. et de Chir.*, 1896, No. 23) recommends the injection into the subcutaneous tissues of the gluteal region 15 minims of the first of the following solutions, followed at once by a like quantity of the second.

(1) Take of

Pure iodin	3 grains.
Potassium iodid	a sufficient quantity.
Distilled water	from 2½ to 5 fluidrams.

Mix.

(2) Take of

Iron and ammonium citrate	15 grains.
Distilled water	from 2½ to 5 fluid ounces.

Mix.

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SATURDAY, MAY 23, 1896.

THE SANITARY ADVANTAGES OF A GREATER NEW YORK.

WHATEVER argument may be made, on economic or political grounds, against the Consolidation Act creating a Greater New York, there can be no doubt that as a sanitary measure it is of immense importance to the people hereafter to reside within the district. It is a well-established principle that the health of several communities, occupying contiguous territory and constantly commingling in business and social relations, is best promoted and protected when it is under the jurisdiction of a single central sanitary authority. The drainage of unoccupied lands, the sewerage of built-up areas, the disposal of refuse, the supply and conservancy of potable waters, the housing of the people, are but few of the many questions that should be determined only after a comprehensive survey of the geological, geographical, and other conditions affecting the health of the people resident therein.

It is even more important for the protection of contiguous communities against contagious and infectious diseases that there be a central health authority which controls all the lines of communication along which the germs of disease can spread from one community to another. The appearance of smallpox in any village within the limits of the Greater New York is now a far greater menace to this city than would be an outbreak of that pestilence in New York itself. This is due to the imperfect methods of prevention and control of contagious diseases in rural communities as compared with large cities.

The economy of a single health administration over this district is an important consideration. A far less number of highly-salaried officials will be required in the new organization. The provisions which New York has already made for the care of contagious diseases, by the equipment of a steamboat service, and the erection of hospitals, will meet the requirements of the larger district with little additional expenditure of money. Our well-equipped disinfectant plant and laboratory can readily be made sufficiently complete to meet the demands of the increased service.

But we are not left to conjecture as to the sanitary advantages of the Greater New York. They have already been demonstrated in this very district, and within the memory of the present generation. In 1866 the Metropolitan Health Department was created, and its jurisdiction covered the territory embraced in the Greater New York measure. It was placed under the control of a Board of Health composed of members appointed from different sections of the district, with a central office in this city. Its expenditures were limited by the legislature to $100,000 per annum. The Board was scarcely organized when cholera, which had been making steady progress westward in Europe for a year or more, appeared at different points in the district. The public alarm was very great, for heretofore the pestilence had spread without hindrance from the inefficient methods adopted by our incompetent officials. But scarcely a week had passed when it was apparent that the scourge was under the most absolute control. The public excitement quickly subsided, few people left the city on account of cholera, and commerce and travel were scarcely interrupted. So promptly and thoroughly did the new Health Board deal with every case in the entire district, that in scarcely any instance did a

second case occur in the same family. All contagious diseases were promptly suppressed in cities and villages alike. Drainage of contiguous lands was effected on a large scale. In a word, during four years the initial sanitary works for the Greater New York were begun, and in some minor respects completed, and the people of the District are today enjoying their benefits.

The New Health Department should be organized in accordance with the latest and most approved teachings of sanitary science. It should be so constituted that only thoroughly trained sanitary officials can control its administration. On this account it is to be hoped that, in the appointment of the Commission required by the act, the Governor will select one member for his special knowledge of the organization of a Public Health Service.

PROGRESS IN MEDICINE.

A CRITICAL RESUME OF RECENT ADVANCE.

Two very radical methods of treating diseases of the heart have come into great prominence on the Continent and in England, but up to this time have never excited much attention or discussion on this side of the Atlantic. These methods are known as the Oertel system and the Schott system, both named in recognition of their practical discoverers and most able exponents. The latter, by virtue of its being less severe in its application and more plausible in its interpretation, has been embraced much more warmly than the former; and the literature and words of scientific commendation which are being published in support of it indicate that in the application of thermal, saline baths and of resistant exercises a most important measure in the treatment of chronic heart disease has been discovered. The scientific contributions which have been made to the subject in England and in Germany are already very numerous, but the physiological interpretation and the clinical application of the method have been much enhanced by several recent articles—one by Dr. R. F. C. Leech, of Edinburgh, another by Dr. Ernest Kingscote of Salisbury (*Lancet*, March 21 and 28, 1896), and a third by Dr. Robert Saundby of Birmingham (*British Medical Journal*, No. 1818).

The Schott method consists essentially of "exercises with resistance" and thermal baths containing carbonic acid gas and certain salts, in imitation of the Nauheim Springs. It is quite impossible in a brief reference to give a complete description of the technic of the method, but the agents brought into action by the bath are rest, temperature, water, salines, and carbonic acid. The rest is obtained by keeping the patient immersed in the bath, without moving, for a time varying from fifteen to twenty-five minutes. The temperature of the bath varies between 86° and 95° F. In the bath, to the special mechanical and physicial properties of the water, are therefore added those of temperature and rest. The saline bath and the carbonic acid bath both seem to have special properties and special influences upon the heart, the respiration, and the blood. It is not the action of any one of the agencies of the bath, but the combined effect, which is regarded by its advocates as curative. The temperature is considered one of the most important factors on account of its striking and far-reaching effects on the blood-vessels, and therefore on nutrition in general. It has been found that, although the temperature of the water of the bath is much lower than that of the body, the influence of the temperature is to cause definite dilatation in the cutaneous blood-vessels, and not a contraction, as one would theoretically suppose. The regular recurrence of these vascular changes brings about certain improvement in the nutrition of the tissues, which has a beneficial influence upon abnormal processes.

The resistant gymnastics, which consist of movements made by the patient against resistance, or, in some instances, of a graduated mountain-climbing, are considered of an importance inferior to the bath, yet the details of these resistant gymnastics are given most specifically, and are nineteen in number. They may be summarized, however, by saying that they consist of movements of the arms, hands, trunk, lower extremities, and feet in various natural positions against resistance made by the attendant. To overcome the resistance all the muscles are brought into moderate and increasing activity.

The cases which are particularly fitted for this mode of therapy are functional diseases, post-

influenzal conditions, nervous exhaustion, due to overstrain and mental worry, neurasthenia, particularly those of toxic and autotoxic origin, and *atonia* attending on anemia. Of the organic diseases, the valvular lesions of the heart, particularly those attended with hypertrophy and dilatation, seem to be benefited, and in many cases practically cured. The third class of cases in which it has been recommended includes simple angina pectoris and Graves' disease. The vast amount of evidence which has been brought forth to show the benefit of this treatment in the last two-named classes of disease is in itself quite convincing.

The results of the treatment are a prompt increase in strength, a diminution in the rate of the pulse, a slight slowing of respiration, and a diminution in the size of the heart, which is most remarkable. During this diminution, a systolic, mitral, or tricuspid murmur disappears, the cardiac sounds improve, and the apex beat becomes more forcible. The applicability of the method—it may be given by an attendant, in the patient's own home—the plausibility of its *modus operandi* as well as the testimony that is borne by unprejudiced scientific observers commend it to every intelligent physician.

The obscurity in which rheumatoid arthritis has been veiled bids fair to become dissipated by recent investigations into its bacterial origin. Three years ago, Schüller (*Berliner klin. Wochenschrift*, Sept. 4, 1895), described a micro-organism which he had found associated with rheumatoid arthritis. It was about 2.6 m. long, 0.75–0.995 m. broad, and exhibited marked polar stains. It was easily receptive of the ordinary stains, and grew with readiness on ordinary culture media, such as gelatin and agar-agar. Recently, Drs. Bannatyne, Wohlmann, and Blaxall have made a contribution to the clinical history, etiology, and pathology of rheumatoid arthritis (*Lancet*, April 25, 1896), which is in the line of Schüller's observation, and which, if substantiated, will be epoch-making in the history of the disease. Drs. Bannatyne and Wohlmann were led, from observation of the clinical aspect of cases and from a knowledge of the work that had already been done in the endeavor to elucidate the cause of this disease, to the conclusion that the disease was due to a micro-organism, and, moreover, they had found, by microscopic examination of the synovial fluid from the affected joints, the presence of a constant and distinct organism. Dr. Blaxall was asked to corroborate or deny these findings. After a most extensive and painstaking examination, the latter found that in the synovial fluid of eighteen cases of rheumatoid arthritis there was an organism which was constant in its characteristic. This organism, morphologically, is a minute bacillus, exhibiting marked polar changes and of variable lenth—up to 3 m., or possibly 4 m. It can be grown in culture media; in beef broth it gives the appearance of gold dust, and on agar-agar and serum its growth is almost invisible. It does not grow on gelatin at ordinary temperature. On account of the small size of the organism, and of its slowness of growth, it was found necessary to conduct the experiments on a large scale—250 cc. of the culture medium—so that any changes in the medium might be easily detected.

In severe cases the organism is found in the blood, but as yet it has not been found in the synovial fluid from distended joints due to other causes. Whether or not the bacteriæ are present in the synovial membrane cannot yet be said, as experiments to affirm or deny this have not been carried out.

Although Dr. Blaxall is very positive that the organism discovered by Drs. Bannatyne and Wohlmann is not identical with that described by Schüller, we cannot see that he substantiates his position by any incontestable proof. They are practically of the same dimensions, they exhibit marked polar staining and are easy of decolorization. But whether they are or are not identical, the discovery remains an important contribution to the subject.

There is probably no conviction more firmly settled in the minds of clinicians than the one that associates angina pectoris with and makes it dependent on disease of the coronary vessels. In the last number of the *Asclepiad*, Dr. Benjamin Ward Richardson discusses the nature, cause, and treatment of this affection on the basis of forty-three cases which he has carefully studied. It is be-

lieved that there is not distinct heredity; that men—"troubled" men—who lead a busy, outdoor, vigorous life, and who are of a nervous temperament, make up the vast majority of the cases.

The assumption that in all anginal cases there are certain evidences of disease of the heart, such as dilatation or thickening of the coronary vessels, and an interruption in the coronary circulation, is not conceded by the writer. Analysis of the development, of the presence, and of the after-effects of an attack leads the writer to believe that the disease is obviously allied to an epileptiform seizure. He suggests that angina pectoris is an actual disease, a disease of a paroxysmal nature, and quite as distinct as epilepsy. As epilepsy is an affection of the cerebro-spinal system, he believes that angina pectoris is due to a disturbance—an explosion—in the sympathetic nervous system, and affects all parts under that system. What the precise changes are, cannot be said; but it is probable that the change is in the body of the ganglia, or in a center extending throughout the whole sympathetic supply and causing effects in all parts involved. He thinks that if a powerful electric shock could be sent through the sympathetic system, apart from the cerebro-spinal, the phenomena would be those of angina pectoris.

Suggestions in regard to treatment are those which are already very well known. The writer dilates on the efficacy of iodid of potash and of nitrite of amyl and nitro-glycerin as the most important medicines; but it is in the modes of life, with a purpose of avoiding every factor which is known to precipitate an attack, that respite and possible recovery comes to these patients.

Joseph Collins, M.D.

ECHOES AND NEWS.

Dr. Paul Segond of Paris, France, and his assistant, M. Chauvean, have arrived in New York to attend the American Gynecological Society. Dr. Segond is the originator of the vaginal route as a method of attack in chronic suppurative pelvic diseases of women.

The American Climatological Association held its thirteenth annual meeting at Lakewood, N. J., last week. The attendance, although not large, consisted of representative members from almost every part of the Union, and the session was marked by the discussion of a number of important scientific questions, a solution of which will afford unbounded benefit to the human race. The social features of the occasion were not neglected.

Mayor Strong of New York City approved, last week, a bill granting $30,000 of the city's money to the Flower Hospital. Ex-Governor Flower was present in the interest of this charity which bears his name.

Dr. Edward J. Forster, surgeon-general on the staff of Governor Wolcott of Massachusetts, fell dead of apoplexy upon the deck of a Fall River steamer before she had left her New York pier, on May 15th.

M. A. Ranier has bequeathed 2,000,000 francs for the establishment of a physiological laboratory in Brussels.

Dr. Schwartze has been promoted to the position of honorary professor of otology at Halle.

Dr. John Whitridge Williams has been appointed Associated Professor of Obstetrics at Johns Hopkins University, and is now in charge of that department.

As mentioned last week, cholera is becoming epidemic in Egypt. Alexandria reported seventy-three new cases and twenty deaths on the 16th instant.

Mme. Audifford has presented the French Academy with 800,000 francs, the interest of which is to be awarded, without regard to nationality, for the discovery of a cure for consumption.

The successful serum-treatment of leprosy in fifteen cases is reported by Carrasquilla of Bogota, South America. Marked effects occur after the first injection, and sensibility, appetite, and cheerfulness soon return.

Drs. Casey A. Wood and T. Melville Hardin, both of Chicago, have succeeded the late Dr. James P. Parker of St. Louis, as editors of the *Annals of Ophthalmology*.

A new hospital, erected for the Santa Fé Railroad at Topeka, Kan., has been received by the management of this system and opened for the use of its employés. It is said to be the finest railroad hospital in the world, and was built from monthly assessments of the employés amounting to $100,000.

At the last meeting of the Medical College Association Dr. James M. Bodine of Louisville, Ky., was elected president, and Dr. Bayard Holmes of Chicago, re-elected secretary. No important changes were made in the standard of requirements as already announced by this Association.

A French gynecologist has reported the case of a woman who had been in the habit, for more than twenty years of using a lemon in lieu of a pessary. The effect was quite satisfactory, and no harm appeared to follow the practice.

Professor Germain See, the eminent French physician and therapeutist, died in Paris on the 13th instant. He was nearly eighty years of age. Since the death of Professor Trousseau, whom he succeeded, Professor See

has enjoyed a reputation second to none in France, and his contributions to the world's medical literature have been valuable and extensive,

A British bark arrived at the New York quarantine station from Rio Janeiro reporting five deaths from yellow fever during her voyage. She has been held for disinfection.

Four Sisters of Charity from New Orleans have volunteered to devote their lives to the care of the lepers at Indian Camp, La. They have already been installed in their new mission. where they find thirty-one victims of this disease.

The St. Petersburg Medical Academy has been granted 5000 rubles ($2500) by the Russian Government with which to investigate and perfect Professor Rontgen's discovery.

Dr. Rebecca Porter Page died at Plainfield, N. J., on the 16th instant. She was one of the first female physicians of that State, and was one of the earlier graduates of the New York Medical College for Women.

The University of Pesth has conferred an honorary degree upon Dr. John S. Billings, who is now traveling in Europe. The same degree was conferred at different times upon Lord Kelvin, Herbert Spencer, Max Müller, and James Bryce. Dr. Billings is now librarian of the New York Consolidated Library. He already has the degree of LL.D. from Edinburgh.

Governor Morton has signed a bill relating to the management of the New York State Hospitals (insane asylums) by means of which the present officers retire at the end of this year. This leaves the field open for the appointment of such officers as the politicians may dictate, and into their hands will be given the distribution of $4,200,000.

The corner-stone of the clinical amphitheater of the Medico-Chirurgical Hospital, Philadelphia, was laid on the 12th instant with masonic ceremonies. The oration of the occasion was delivered by Governor Hastings.

The twenty-first annual meeting of the American Gynecological Society will be held at the New York Academy of Medicine on May 26th, 27th, and 28th. Professor William T. Lusk will deliver the address of welcome, and on the morning of the second day, the President, Professor William M. Polk, will deliver his address. The scientific discussions, as indicated by the program, give promise of a most interesting and profitable meeting.

At a recent meeting of the French Congress of Surgery, Dr. Reclus proposed, as a substitute for amputation, a surgical procedure which carries conservatism to a dangerous extreme. His method consists in rendering the injured member absolutely aseptic, in doing which he depends principally upon hot water, 140° F. After this is accomplished, an aseptic dressing is applied that prevents decomposition in any tissue that may fail to revive. When natural lines of demarkation have been established, a very limited amount of operative work will usually suffice to remove the devitalized or useless portion.

In his address as President of the National Confederation of State Examining Boards, Dr. W. W. Potter of Buffalo, N. Y., recently said at Atlanta that he was not in favor of a National Examining Board as had been proposed, but thought all States should be encouraged to established a common minimum standard of requirement, and that when this had been accomplished reciprocity of licensure between them should be considered.

The faculty of Bellevue Hospital Medical College, at its meeting on May 5th, took the following action:

Dr. J. Lewis Smith, in consideration of his long connection with the college, was appointed Emeritus Professor of Diseases of Children.

Dr. George D. Stewart was appointed Adjunct Professor of Anatomy.

Dr. William P. Northrup was appointed Professor of Pediatrics.

The *Journal of the American Medical Association* says editorially: "Notwithstanding the protest of the American Medical Association and numerous other medical and scientific societies, the committee on the District of Columbia has reported a bill to Congress to restrict vivisection in the District of Columbia. Senator Gallinger (homeopathist) of New Hampshire, who has charge of this matter, is on record in favor of absolute prohibition and will probably push it to a final consideration. The time has come, therefore, for the profession throughout the country to awaken to the gravity of the occasion. It must act speedily. No one should delay for a single day to file his individual protest with the Senators and Representatives from his own State."

The year ending with the commencement exercises, last week, has been one of more than usual importance in the history of the Jefferson Medical College of Philadelphia. More modern buildings, for both the didactic and clinical departments, have become necessary, and in meeting these requirements, the question of seeking a new location naturally arose. The determination to enlarge and rehabilitate the present site has been announced.

In Chester, England, there recently died a man who had distinguished himself by appearing before the City Justices 130 times in the capacity of a criminal. His father had been tried 35 times, one sister 67, and another 29 times, making a grand total for the family 347 trials. The estimated cost of these prosecutions was $10,000. This is only one example of inherited criminal propensities, a knowledge of which must extend to the masses before popular opinion will demand that the State shall provide for this class of defectives as is now done for the insane.

The Philadelphia Woman's Health Protective Association and a committee from the County Medical Society are agitating the question of building a pay hospital for contagious diseases in that city. The necessity for such an institution in all the larger cities is

just beginning to find recognition in the eyes of the public. Medical men have long appreciated the hardships attending the present imperfect methods of caring for patients afflicted with such diseases.

IT is interesting to note that for one thousand years, from the seventh to the eighteenth century, the use of the vaginal speculum was almost entirely discontinued. This is attributed to the "influence of the Arabian school, which gained its supremacy at the time when the Moslem conquerors took possession of Alexandria, and burned its famous library by command of Omar, A.D. 642." It is contrary to the Mohammedan creed that any woman should undergo personal examination except by one of her own sex. It would be interesting to know whether our American women, who are placed upon the examining table in almost every doctor's office in the country, are better off than the women who lived in 1690.

ONE of the interesting characters of the fourteenth century, was the sergeant surgeon of Edward III., in 1346, John of Arden. He gives a "Description of ye qualities which ought to be in ye surgeon that performeth any operation in chirurgery:

"First, that he be devout.

Secondlie, charitable to ye poor.

Thirdly, to use few words.

Fourthly, to avoid drunkenness.

Fifthly, to be chaste both in words and gesture, as well as to fear ye not.

Sixthly, not to undertake an incurable disease."

A CORONER of Brooklyn has rendered a verdict, recently, of death by lead-poisoning, the circumstances being, in brief, as follows: The decedent, named Carroll, had been engaged in painting certain apartments with white lead and Paris green. Being an engineer, engaged during the day, he spent his evenings in decorating the rooms of his home. He had painted one room and was about to begin work in another, when it was decided to add more Paris green to the paint and make it a shade darker. The following day he was taken ill, and Monday was confined to his bed. His physician is said to have pronounced Carroll's illness due to painter's colic. Counsel was called, but the combined efforts of the physicians were unavailing, and he died four days later, probably from the joint effects of arsenic and plumbic fumes.

SCRUMPOX.—"Scrumpox" is the English schoolboy's name for a severe form of impetigo occurring among the forwards of Rugby football teams. The "scrum," or "scrimmage," with its close commingling of heads, arms, and legs in indiscriminate confusion, undoubtedly offers ideally favorable conditions for the communication of this disease, which is usually confined to the head and face, and often results in severe suppurative dermatitis, with glandular enlargement.

THE *Sanitary Record* says that a rule of the public schools of Copenhagen requires that each pupil shall take three baths a week in the school building. While the pupils are bathing, their clothes are sterilized in a steam oven. When this practice was first introduced, there was no complaint, but in a short time the parents of the children "protested vigorously, on the ground that it made the children discontented with their dirty clothes, and caused them to complain constantly of the filth of their dwellings."

DR. BOUDINOT CURRIE ATTERBURY, medical missionary of the Presbyterian Church in China, has been honored by the Emperor of China with the Imperial Order of the Double Dragon, Second Degree, a distinction never before conferred on any foreigner, excepting, perhaps, the ruler of some friendly Power. This mark is in recognition of the notable services rendered by the American physician in connection with the work of the Red Cross Society, during the late war.

Dr. Atterbury was born in New York City, and comes of a family long prominent in New York. He studied at Yale College, and took his medical course in this city, under the direction of Dr. Frank H. Hamilton. After he was graduated in medicine from Bellevue Hospital Medical College, of the class of 1877, he went to China under the suspices of the Presbyterian Board, and was assigned to missionary duty in the city of Pekin. He there assisted in the establishment of the Ah Ting Hospital. While there, his work was brought to the attention of the emperor and the royal family. He afterward went to Tientsin, where he is at present. A short reference to the arduous labors of Dr. Atterbury in the Red Cross service was given in a receut issue of this journal.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS,

Eleventh Annual Meeting, Washington, D. C.,

(Continued.)

(Specially Reported for THE MEDICAL NEWS.)

Friday, May 1, 1896.

MORNING SESSION.

The next paper was

A CASE OF PARASITIC CHYLURIA WITH FILARIÆ SANGUINIS HOMINIS IN THE BLOOD,

by Dr. F. HENRY of Philadelphia, which appeared in full in the MEDICAL NEWS of May 2d.

DR. A. H. SMITH reported a similar case of filariæ in the blood of a patient from South America. There was marked elephantiasis with chyluria, and he had had five severe febrile attacks. The parasites could be found abundantly, both by day and night, but were all dead.

Drs. Meltzer and Theobald Smith added some suggestions as to methods of examination.

DR. HENRY, in closing the discussion, said that filariæ had been removed from various parts of the body, and on account of their size were readily apparent. In regard to Dr. Smith's case, when the parasites were found by day also, they were usually of the West African variety. The "elephantoid" fever is common, and orchites not infrequent. The organism should be treated kindly and made

to feel at home, for the sole danger lay in the fact that the female, if irritated, would abort, and as her imperfect ova are nearly $\frac{1}{750}$ inch in diameter, they are too large to pass through the capillaries, hence block the channels and elephantiasis, chyluria, and abscesses result. The normal ova are perfectly harmless to their host.

By courtesy of Dr. Osler the paper on

DILATATION OF THE STOMACH, ITS DIAGNOSIS AND TREATMENT.

by Drs. Wm. Pepper and Alfred Stengel of Philadelphia, was next read in place of his own. Being quite extensive only a résumé was given.

This condition is much more frequent than has usually been suspected and is never simply "mechanical." The tone of the muscular coat is more important than the size of the organ or position of lower border. In a large series of cases pyloric divulsion had been most beneficial. As to means of diagnosis, the various "splashing" sounds were interesting but difficult to locate; they are decidedly unreliable, the amount of fluid which can be injected is a better test. The gastroscope is neither practical nor reliable and gives poor results. Inflation by gas is best of all preferably by air through tube, as gastric "effervescence" is dangerous in weak stomachs. The borders may then be distinctly seen and the position of *all* of them mapped out which is most important. Motor sufficiency is best tested by Leube's test-meal. Occurrence of acid fermentation is also a valuable sign. The various differential diagnoses were then taken up.

Dr. Henry said that in his experience the best test for gastric cancer was the blood-count, which in this condition will seldom fall below 2,000,000 red cells, a reduction utterly inadequate to account for the anemic cachexia.

President Jacobi thought that a diagnosis could be made between cancer and pernicious anemia by the condition of the blood-cells which in cancer were all of normal shape, while in anemia large numbers of imperfect and distorted forms would be present.

Dr. J. H. Musser of Philadelphia, reported

A CASE OF LEUCOCYTHEMIA..

The patient whose history was uneventful and who presented the typical symptoms of the disease was first seen in June, 1895. His color and general condition were good, his weight 160 pounds. Six weeks later the inguinal glands were found enlarged, and from that time the disease ran a rapid course, death resulting in six months. An autopsy showed little abnormal except general edema, a greenish clot in the right ventricle, an enlarged spleen and some intestinal ulcerations. Blood counts showed 1,700,000 red cells and many large and small (transitional) leucocytes, a number of large irregular red-cells, while nearly twenty-four per cent of the leucocytes were polynuclear. Nucleated red cells were also abundant. Sections of lung and bone were examined and found nearly normal, so that the leucocythemia was apparently of splenic and lymphatic origin, although the blood did not so indicate.

Large amounts of iron were found in the muscles and the liver, which seemed to support the view as to the destruction of the red cells, while the intestinal ulcerations suggested an intestinal origin for the toxemia.

Dr. Welch thought that the polynuclear cells, described in the blood and glands, belonged to the general class of polynuclear or so-called "marrow" cells which, however, were to be found in all the tissues of the body. Their condition was probably due to the rapid "endogenous" budding of their nuclei, and an imperfect attempt at rapid reproduction.

The paper of Dr. I. N. Danforth of Chicago, upon

THE TREATMENT OF PERNICIOUS AND OTHER FORMS OF ESSENTIAL ANEMIA,

was read in his absence by Dr. Lyman. Two well-marked cases of pernicious anemia were prescribed, in both of which iron gave temporary relief but soon became both inert and repugnant; arsenic had a little more permanent effect, and bone-marrow most marked and lasting of all, but could only delay the fatal result.

The question was suggested whether the large amount of iron found in the liver *post-mortem* in these cases might not be due to the excessive use of iron as a remedy. As an intestinal antiseptic naphthol was found much superior to iron. Much relief was derived for a time by the use of an arsenical mineral water from the Tyrol. In the first case bone-marrow became repugnant and a glycerin extract of red-marrow was substituted, with such effect that the hemoglobin increased from thirty per cent. to eighty per cent., and the patient considered herself cured for nearly eighteen months. A relapse then occurred, which was at first helped by red-marrow, but the improvement was only temporary and the patient gradually sank and died. In the second case the patient, who was apparently almost moribund, and in an advanced stage of the disease, was so marvelously helped by the red-marrow that he was up and about his business again in six weeks and regarded himself as cured, but soon relapsed and this time hopelessly.

Dr. A. H. Smith reported a case with all the symptoms of this disease, but there was no deformity of the red cells and their count was down to one million. The man's stomach would not tolerate either iron or arsenic, so was practically on no treatment, when he suddenly began to improve, left the hospital, and went back to work. Relapse occurred one year later, and an autopsy revealed gastric carcinoma.

Dr. Janeway said that sudden improvements without apparent cause were common in these cases. Indeed, most of the "cures" reported were of this class, and death was found to result in a year or two. The only "cure" which in his experience had lasted more than two years, was in a case treated by long-continued use of hemoglobin from fresh ox-blood. It is important to remember that pallor is often absent in these cases, even in advanced stages, the abundance of leucocytes prevents it. The lips are not pale, but "dirty-red."

Dr. Henry corroborated the last observation. Had one case which had remained cured for two years after the use of arsenic to the extreme limit of safety.

DR. CROZER GRIFFITH remarked that the cause of this condition is still unknown, but is probably some form of hemolysis. Certainly, iron is of no value, for there is an excess of hemoglobin in proportion to red corpuscles in the blood and hematin in the tissues already. Arsenic and marrow both stimulate the formation, or transformation, of corpuscles. The only cure is to check the blood destruction, and this often primarily due to an intestinal toxemia.

DR. WEIR MITCHELL then read a positively fascinating paper upon

SOME UNUSUAL FORMS OF BROMIC INTOXICATION,

of which no abstract can give an adquate idea. It has long been recognized that the bromids may increase the unpleasant after effects of epileptic attacks, especially the irritability of temper. This will, in some cases, be accompanied by ptosis and feebleness of the limbs, not rarely more marked upon one side than upon the other, just like some drunkards who can recognize that they are distinctly "drunker in one leg than in the other." Feebleness and dulness so marked at times as to amount to partial imbecility. This was the condition in a girl of seventeen, whose father, an apothecary, on the principle "if a little helps much will cure," had been giving her 150 grains of potassium bromid a day. The fits stopped, the child nearly did the same, lying for days in a state of imbecile collapse, but recovered rapidly when the drug was stopped.

In two children, to each of whom one hundred grains of lithium bromid was given by mistake, a similar, though milder condition developed. There were curious disturbances of memory and they were quite unable to walk, the left leg being worse than the right. In many cases he had seen melancholia and mental depression, even a suicidal degree produced by continued use of the drug. In one singular case a doctor's wife, who had been mildly melancholic for years, on approaching the menopause began to be troubled with marked suicidal tendencies at her menstrual periods. These she confided to her husband and he brought her to Dr. Mitchell, when after much questioning, she confessed for the first time, that ever since a furious attack of sciatica, years ago, she had been taking sixty grains of mixed bromids daily, "for fear the pain would come back." She was advised to stop this practice at once, and to her surprise her next period passed without any unpleasant symptoms, and in a few weeks she was rid of her melancholia entirely. A year later, in the course of a neuralgic attack, she was given 90 grains of bromid by an attendant, with the result that her melancholia returned and lasted until the effects of the dose had passed off. In other epileptic cases the drug would increase irritability of temper to the verge of homicidal tendencies.

Some years ago a young farmer was brought in by his friends with this sort of a history. Dr. Mitchell was then utterly skeptical as to the possibility of such an effect, and in spite of the great reluctance of the patient's family, insisted on putting him upon the usual bromid treatment. The experiment at the end of three days came most perilously near resulting in a tragic homicide, and the doctor was fully convinced without further trial. In two instances young boys were reported by their parents as "ugly" and unmanageable whenever they were taking the bromid, though at other times good-tempered and obedient.

The drug also produced marked maniacal excitement, which rapidly passed away on it's stoppage.

DR. JANEWAY wished to add to this interesting paper three cases of his own of fatal poisoning with imbecile symptoms by bromids, given for epilepsy in doses of three drams, six drams and one ounce per diem respectively. The coroners of New York had also reported two other similar cases to him. He had several times known the excessive use of "bromo-soda" by alcoholics—an altogether too common and dangerous remedy, by the way, in "sobering up"—followed by symptoms strongly suggesting general paralysis. In one case six bottles a day were taken. He was sure that many cases of mental depression in convalescence from typhoid were caused by the bromid given for restlessness.

DR. HARE raised the old historic question, whether the evil effects of bromid was not really due to the potash element, which is in itself a dangerous depressant. Even the citrate of potash, in large doses, had been known to cause collapse. Personally, he would prefer the bromid of soda as safer.

In the use of "bromo-caffein" or "bromo-soda," might not the caffein be partly responsible? He had seen large doses of the latter alone given for heart-disease produce acute mania.

DR. LYMAN remarked that his experience verified the paper, but questioned whether heredity and the presence of the arthritic diathesis might not contribute largely to the production of irritability and mania. Has avoided the potash salts for years.

DR. THOMSON added three corroborative cases, two of which were epileptics. One of these suddenly left home without warning and went on a visit of several days to mere acquaintances, entirely uninvited, while taking bromids. The other, a young lady, deliberately bade her mother good-by upon the street and ran away from her. Both recovered on stopping the drug.

DR. DANA thought that the cry about the poisonous effects of potassium was an exploded bugaboo, or at all events, he was very skeptical as to its basis. In a large experience with both, he had been unable to detect any difference in effect between the sodium and potassium salts. Had seen huge doses of the potash salts given without any serious effects whatever and thought the chief danger was from the bromin alone. Had seen just as severe toxic results from sodium bromid as from potassium bromid. In small doses the effect of the bromids is soothing and cheering and the only danger is from most unnecessarily large doses employed. In his experience three to five grain doses will produce as marked results in most cases as twenty or thirty grains.

DR. MITCHELL, in closing the discussion, expressed his thanks for the valuable additional contributions to the knowledge of this subject. Personally he had never seen any more depressing effects from the potassium than from

the sodium or lithium bromids. He commonly used the latter as being more soluble and this had been the form in several of the cases reported in his paper. He urged that the bromids should be used more sparingly, they seemed to be regarded as the inevitable therapeutic necessity in nearly all nervous affections, and he comparatively seldom saw a case in consultation in which bromids had not been admistered by some one.

AFTERNOON SESSION.

The paper of DR. OSLER

NOTES ON NEUSSER'S GRANULES IN THE BLOOD

was read by title.

IDIOPATHIC OSTEOPSATHYROSIS IN INFANCY AND CHILDHOOD

was discussed by DR. J. P. CROZER GRIFFITH of Philadelphia.

This condition also known as *fragilitas ossium*, is comparatively rare at any time of life, and particularly in infancy or childhood. It is distinct from the bone affections due to syphilis, osteomalacia, and rickets. A case was reported in a boy of two, who, since shortly after birth, had suffered no less than eighteen fractures. So easily were they produced that the child had to be kept lying on a stretcher constantly. His general health and mental development was good. Inheritance is of importance, for although the history in this case is negative, tables show eleven cases in one family, nearly all of whom were males, thirty-four fractures had been reported in one case, and sixty-four in another. One woman's legs would break under her weight or by turning over in bed. Appeared to be an arrest of the normal ossifying process, as even a microscopical examination reveals little abnormal in the structure of the affected bones. No cause known, except inherited tendency. It most nearly resembles "fetal rickets," so-called, which is not a true rickets at all. Bones do not bend as in osteomalacia, but simply snap. Fractures usually unite rapidly. Disease probably produced through the central nervous system.

DR. LYMAN added another case in a young man who, between early childhood and the age of twenty-five years, had suffered thirty-three fractures. The tendency, fortunately, "wore itself out" and disappeared at the age of twenty-seven years. The pelvis and tibiæ were, however, much deformed and bent so as to produce much deformity. He was well developed, but had no sexual appetite.

DR. MUSSER inquired as to the amount of urine passed, as polyuria was common in rickets.

DR. A. H. SMITH mentioned a case of senile fragilitas in an autopsy at the good old age of 111 years. The ribs were cut with scissors, like paper.

The papers of DR. WM. H. WELCH, of Johns Hopkins, upon

BACTERIOLOGIC EXAMINATIONS IN ACUTE ENDOCARDITIS,

of DR. GEO. DOCK of Ann Arbor upon

A CASE OF TRICUSPID STENOSIS, WITH OTHER HEART LESIONS AND CARDIAC LIVER,

were read by title.

DR. WM. H. THOMPSON of New York, read a brief, but suggestive, essay upon

PAINFUL POINTS IN GOUTY COMPARED WITH RHEUMATIC ARTHRITIS.

In twenty-four cases of gout, the disease began, in ninety-eight per cent., in the lower extremities and in the periosteum. The points of change and of tenderness upon pressure are over the condyles, especially in the finger joints.

In fifty-three out of fifty-eight knee-joints attacked by rheumatism, the points of greatest soreness and tenderness were along the line of the tendons; in no case over the condyles. This he believed to be the general rule, except in the elbow- and wrist-joints.

DR. LYMAN stated that a recent English observer had called attention to lateral tenderness as a diagnostic symptom of gout, which he believed to be due to the nerves being involved.

The papers of DRS. C. F. FOLSOM of Boston, upon

THE PREVALENCE AND FATALITY IN PNEUMONIA,

and E. G. CUTLER of Boston, entitled

A CASE OF SUBDIAPHRAGMATIC ABSCESS WITH OPERATION,

were read by title.

DR. WHARTON SINKLER'S essay upon

HABIT CHOREA

was then taken up.

There are two distinct varieties of this disease, one in which it is the result of a mere habit or oft-repeated trick and the other in which some predisposing cause is the chief factor. It is commonest in the muscles of the face and jaws, especially those about the eyes and eyebrows, the zygomatici being next most commonly affected. However, the limbs are also affected at times, even the lower, in which case a jerking gait resembling equine "string-halt" is produced. In one of his cases, a girl of sixteen, walking, would be interrupted every few minutes for the purpose of rubbing the back of one calf with the toe of the other foot. In another the trick of rubbing the eyebrows with the fingers had been so persisted in that the brow was completely cleared of hair. Another patient, a boy of five would persist in imitating the actions of a motorman, in turning on or off the current on an electric car.

Not infrequently some curious atavistic reflexes were noticed such as movements of the ears in connection with those of the nostrils in vigorous sniffling, like the horse or deer. The age of the cases reported varied from one to thirty-seven years, but seem most frequent in the second decade of life. In 34 out of 140 cases heart-murmurs were present and in 35 out of 49 examined errors of refraction were found. The confinement and strain of school attendance strongly predisposes to and aggravates the attack.

The chief principle of treatment is to seek for the local cause, refractive errors, nasal disturbances, local neuroses, etc., and remove this, as drugs are of but little use before this is done. Change of air and arsenic will then be found most useful, but the best results of all are by the modified rest treatment.

Dr. Osler protested against some of the positions taken in Dr. Sinkler's paper; they seemed to him a step backward. Habit-spasms of any sort was an entirely distinct thing from chorea. They were hard to distinguish in some cases but generally recognizable by the fact that it was more obstinate, was accompanied by mental disturbances and very seldom associated with endocarditis. The term chorea has been greatly abused and made to cover a great variety of conditions since it was first used by Burton in his famous "Anatomy of Melancholy." The name, of course, is unimportant, but the two conditions confused in this paper are absolutely distinct.

Dr. Putnam supported Dr. Osler's position. Habit chorea belongs to the class of mental diseases, "Association Neurosis," as Morton Prince calls them.

Dr. Weir Mitchell thought the separation simply a matter of names. The disease group was definite and well marked no matter by what name it was called. For his part the frequent occurrence of heart lesions at least suggested a relation to true chorea.

The President remarked that the principal symptoms of this group belonged to the face, the region of the fifth and seventh nerves and are often nasal reflexes. Most of them begin in children under ten years of age. In his experience nearly ninety per cent. of them recover upon correcting any nasal abnormalities present. Arsenic he had found of benefit as an adjuvant to local treatment in old cases.

The paper of Dr. J. H. Musser of Philadelphia upon

RAYNAUD'S DISEASE AND ERYTHROMELALGIA,

was read by title and will appear in an early issue of the Medical News.

Dr. C. L. Dana of New York, presented a report upon

A METHOD OF CURING TIC DOULOUREUX.

After a vivid description of this agonizing affection, in which everything that the wit of man could suggest, from bromids to surgery, had been used as a remedy, but without permanent or reliable results, he proceeded to describe a method of treatment which had proved very satisfactory in his hands. This consists of three parts. (1) Massive doses of strychnia hypodermically; (2) tonics; (3) rest in bed, with a nearly liquid diet, and large amounts of diluent drinks. The strychnia he begins at one-thirtieth grain and rapidly increases up to one-sixth to one-fourth grain *per diem*, until slight toxic symptoms are produced. He was surprised to find a markedly anodyne effect from these large doses, and often a somewhat somnolent condition, with a stronger, slower pulse. Illustrative pulse-tracings, from some of his cases, were shown. The relief of pain following the injections was in some cases so marked that patients would return later in the day begging to have them repeated. A curious fact was that painful mesenteric spasm was no contraindication to the drug, but was promptly relieved by it. The tonics consisted of heavy doses of potassium iodid and iron. The rest in bed was one of the most important parts of the treatment, and was insisted upon in all severe or obstinate cases. It must be all day long for four weeks, then half the day for two weeks more. A second course of the treatment was sometimes needed, but in no case yet had marked benefit failed to result. The relief from the pain had lasted in his cases from two to five years, the latter being the period during which he had been using the treatment. He regarded the disease as essentially a local expression of general malnutrition, with arterial sclerosis. Surgical interference was regarded as a clumsy cutting of the Gordian knot, and justifiable only as a last resort.

Dr. Putnam thought the interval of cure not long enough to give certainty. In Boston the experience with surgical means had been most satisfactory—far more so than with any other.

Dr. Janeway had secured the best results from aconitia, when he was sure of a good article of the alkaloid, as many preparations were almost utterly inert. This he followed by Croton–chloral, in five- to ten-grain doses.

Dr. Sinkler inquired as to direct effects of strychnia, and thought the general therapeutic measures of more importance than the drug.

Drs. Meltzer, Hare, and Bond added further questions as to methods, the former inquiring as to the possible effect of suggestion in these cases.

Dr. Dana, in closing, replied that suggestion was possibly somewhat helpful in the result. The rest was very important; but one case had recovered without it.

Dr. J. J. Putnam of Boston, read a paper upon

THE RELATION OF MIGRAINE TO NEURALGIAS OF THE FIFTH NERVE.

Migraine was described as a neuralgia instead of a distinct neurosis, as it is usually regarded. It was formerly supposed to be of malarial origin, and it has certain periodic tendencies about it, but is more commonly associated with catarrh of the frontal sinuses than with any other single condition. Hereditary influence plays an important part. The treatment found of most benefit is quinin in large doses about four hours before the expected attack. Arsenic is next in value, and nasal treatment of great importance.

Dr. Thomson regarded the periodic neuralgias as forms of migraine, and thought it often followed influenza.

Dr. Fussell declared that the malarial influence was entitled to considerable weight, as recent observers had discovered the plasmodium in the blood of patients suffering from migraine.

Dr. Hermann Biggs of New York, then presented a report upon

THE VIRULENCE OF THE DIPHTHERIA BACILLI FOUND IN THE THROAT IN CASES PRESENTING THE CLINICAL SYMPTOMS AND TONSILITIS.

We are willing to quarantine cases of scarlet fever until all danger of infection is passed, but not diphtheria. The mildest forms of angina may be caused by true bacilli of diphtheria. These observations had been made upon all sorts of doubtful cases, and whenever bacilli were found, they were cultivated and tested upon guineapigs. In only three out of forty-eight cases in which bacilli were found were the latter non-virulent. Of these cases nineteen were clinically "follicular tonsilitis"

throughout, and twenty-three were so at first, developing membranes and regular diphtheritic symptoms later in their course. Eighteen out of the nineteen "follicular" cases yielded virulent bacilli. Nearly all these cases gave history of recent exposure to diphtheria. The bacilli persisted for from eight to thirty days after recovery. He makes four divisions of cases of diphtheria. (1) Healthy throats in which Loeffler bacilli are present; (2) simple anginas, in which the bacilli are present; (3) typical cases of diphtheria in which bacilli are found; (4) membranous anginas of severe type in which no Loeffler bacilli are present, but which are clinically and for "official" purposes true diphtheria, probably caused by other forms of bacilli.

Dr. Welch remarked that in his laboratory ninety-three per cent. of "suspected" cases of membranous angina showed Loeffler bacilli and nearly the same proportion had been reported by Bolton. All throat diseases where bacilli occur should be classed as diphtheria whether the clinical symptoms develop or not.

Dr. Meltzer wished to confirm the last statement and to add that many cases in which bacilli could not be detected should also be included, as neither their absence nor that of membrance, necessarily disproved such a diagnosis.

The President remarked that in his opinion most of the "simple sore-throat" in epidemics of diphtheria was true diphtheria. He questioned, however, whether every case in which the Klebs-Loeffler germ was present ought to be regarded as diphtheria, for he believed that many of those present probably had such bacilli in their throats and yet were in no danger of diphtheria.

Dr. Biggs in reply stated that the bacilli were not common in healthy throats, only about one per cent. of those examined, except after contact with diphtheria in some way. The throats of the New York Health Inspectors have been repeatedly examined for this form with generally negative results.

The papers of Dr. Osler of Baltimore upon

HEPATO-PULMONARY ABSCESS

and

THE PATHOLOGY AND PATHOGENESIS OF ACUTE AND SUBACUTE DIFFUSE NEPHRITIS,

were read by title.

Dr. Andrew H. Smith of New York, then closed the session with a paper upon

PROGNOSIS IN PNEUMONIA.

The most important factors in determining this are rheumatic, nephritic, and cardiac complications, the use of alcohol being of secondary importance. The temperature cannot be relied upon as a sign; indeed those cases developing very high temperatures often do best. The pulmonary heart sounds are of the greatest prognostic value since death usually occurs from failure of the right heart.

The old "buffy coat" of our ancestors was an excellent sign, as it was a good index of the degree of leucocytosis. This measures most accurately the degree of the resisting power of the system. In 101 cases, the 6 fatal ones all showed a subnormal leucocytosis. In no case in which the leucocytes fell below 14,000 (9000 being normal) did recovery occur. Leucocytosis rises with the temperature and falls with crisis. If, however, an excess of leucocytes persists after crisis, it suggests toxins still remaining in the system, and relapses are very likely to occur.

Dr. Meltzer asked whether bacteriological examinations of the blood had also been made, and was inclined to account for the good results after high temperatures on the ground that these destroy the bacillus lanceolatus (Friedlander's).

Dr. Hare had always been much interested in the influence of fever upon infectious diseases and their bacteria. Fever is unquestionably protective up to a certain point, say 106°, but above that directly dangerous to the tissues. Temperature is also an index of the reactive power of the tissues. Antipyretics diminish production of heat and hence increase the danger.

Dr. Welch thought that no help in prognosis was to be gotten from bacteriological examinations. He believed all cases of lobar pneumonia to be due to the attack of the micrococcus lanceolatus and its toxin the source of danger. The chief factors were the amount of the poison and the resisting power of the tissues.

There was no ground whatever for any theory of the advantages of fever from a bacteriologic standpoint. The growth of the micrococcus lanceolatus was checked only by 46° C. (114° F.) which of course was seldom attained in the human tissues.

SATURDAY MORNING.

The first paper of the closing session was read by Dr. G. M. Garland of Boston, upon

A CASE OF ESOPHAGEAL HEMORRHAGE, WITH CIRRHOSIS OF THE LIVER.

This extended over a course of several years, with a long interval of perfect health between the first attacks and the last fatal series. The hematemesis was so profuse after eating that rectal alimentation had to be largely depended upon. After a number of sudden and severe attacks, upon which treatment had no effect, the active vomiting ceased, but there was almost constant dribbling of blood from the mouth, with tarry stools, and the patient gradually sank, until death occurred, after several days of unconsciousness. No pain or dyspeptic symptoms at any time developed. The autopsy showed a considerable amount of ascites and a gangrenous appendix. The gut was full of blood; the esophageal plexus of veins enormously dilated, and a distinct perforation present. The liver was small and cirrhotic.

Dr. Osler reported two similar typical cases, with profuse hematemesis and bloody diarrhea recurring at intervals for years. In both autopsies the liver was found cirrhotic, the whole portal and abdominal venous system greatly distended, and a persistent "hemorrhoidal" condition of the esophageal plexus with well-marked erosions. The cause of the condition is an attempt to return the blood to the right auricle otherwise than through the liver, the "short circuit" being made *via* the veins of the lesser

curvature of the stomach and the esophageal vessels, and in some cases the anastomosis is successfully established.

Dr. Graham reported the case of a boy who died of hematemesis, in whom the autopsy revealed varicosities of the esophagus, but without any cirrhosis of the liver or abnormality of any other organ.

Dr. Mitchell added another case in a child who died of unaccountable hemorrhage following scarlet fever. The autopsy showed large "esophageal piles" and also a group of dilated veins in the stomach but no disturbances of any other organ.

The President was of the opinion that the hemorrhage must be due to local changes in the vessel walls, mere dilatation was not sufficient to account for it. Local defects in the arterial walls were not uncommon, absence of elastic tissue for instance. Atheroma might also be the cause, especially in a case the age of Dr. Garland's.

Dr. S. J. Meltzer of New York, then made a preliminary communication upon

ABSORPTION IN THE STOMACH,

based upon a series of extremely interesting and ingenious experiments upon the stomachs of rabbits and cats. The absorptive powers of the stomach have been greatly overestimated. Late experiments show that very little water is absorbed from it. His tests were made with solutions of strychnia and hydrocyanic acid. In cats tying the pylorus greatly delayed the appearance of toxic symptoms of both drugs. The control rabbits were killed in twenty to forty minutes by 10 m. gms. of the strychnia solution, while those in whom the pylorus was tied lived from fifteen to twenty hours after doses of 60 m. gms., and then died of peritonitis. Lest this result might be due to cutting off of circulation, injections were made by hypodermic needle directly into the substance of the stomach-wall with rapidly fatal results.

Similar experiments with hydrocyanic acid showed that it was rapidly absorbed under all circumstances, this being due partly to its volatility and partly to its destructive effect upon the cells of the mucous membrane in which numerous minute hemorrhagic and other lesions were produced. Hence Dr. Meltzer concluded that the cells of the epithelial layer were the principal bar to absorption from the viscus in the case of strychnia and other substances. Similar experiments upon the esophagus showed but little absorption occurred there. His conclusions might be summarized:

1. Doses of 10 m. gms. of strychnia serve to cause fatal results in full normal stomach.

2. With pylorus ligated, doses of from 50–100 m. gms. produced no effect for twenty hours.

3. Absorption from esophagus very poor.

4. Absorption from rectum and oro-pharynx very good.

5. Absorption of prussic acid good everywhere on account of its destroying the vitality of epithelial cells and by its volatility.

The President remarked that clinical evidence supported these experiments. He had found that morphia was much more rapidly absorbed frrom the mouth when taken in powder and without water, than from the stomach, especially where any effect upon the bronchial mucous membrane was desired. In some cases its effects would be produced almost as rapidly as by hypodermic injection.

The papers of Dr. J. M. DaCosta of Philadelphia, upon

PROTRACTED, SIMPLE CONTINUED FEVER,

and of Dr. T. S. Latimer of Baltimore, upon

A CASE OF ACTINOMYCOSIS WITH SPECIMENS,

were read by title.

The Committee of Five upon the *Anti-vivisection Bill*, now pending, made a vigorous and able report condemning the bill, which was adopted and ordered signed by the officers and all the members of the Association.

The charts illustrating Dr. Folsom's paper upon

PREVALENCE AND FATALITY IN PNEUMONIA

were then exhibited and excited much interest.

Dr. M. H. Fussell of Philadelphia, gave a brief but suggestive account of modern methods of utilizing

DISPENSARIES IN MEDICAL TEACHING.

Dr. D. W. Prentiss of Washington, D. C., presented a brief report of the findings of himself and Dr. F. P. Morgan, upon

MESCAL BUTTONS (*Anhiroonium Lewinii*).

A series of experiments had been made upon medical students and upon lower animals with the production of some very brilliant color hallucinations, and roseate visions with indescribable sensations of pleasure and buoyancy. It is used by the Indians much as Pommery Sec is by superior races, and seems much to be preferred to the latter, as not only are its roseate coloring effects more brilliant, but there is no "head" to follow, as it produces absolutely no appreciable after-effects of any sort.

Three alkaloids have already been isolated from the "buttons" (tips cut from a pear-shaped cactus), but none of them have proved, in experiment upon guinea-pigs, to be the active principle, and which is now believed to be one of two resenoids which have just been discovered in the plant. It has been found clinically to be a valuable nerve stimulant and antispasmodic, and to possess some hypnotic properties.

The paper of Dr. H. A. Lafleur of Montreal, upon

SYPHILITIC NEPHRITIS,

was read by title.

The following names having been recommended for membership by the Council at the opening session, the Secretary was instructed to cast the ballot of the Association for their election:

Dr. Isaac Adler, New York.

Dr. J. J. Abel, Baltimore.

Dr. D. D. Stewart, Philadelphia.

Dr. Walter Reed, U. S. Army.

The following officers were elected for the coming year:

President.—J. M. DaCosta, Philadelphia.

Vice-President.—F. C. Shattuck, Boston.

Recorder.—J. Minnis Hays, Philadelphia.
Secretary.—H. Hunn, Albany, N. Y.
Treasurer.—W. W. Johnston, Washington, D. C.
Councillor.—I. E. Atkinson, Baltimore.

After a vote of thanks to the Chair for his able and graceful services as presiding officer, the Association adjourned.

AMERICAN MEDICAL ASSOCIATION.

Forty-seventh Annual Meeting, held in Atlanta, Ga., May 5, 6, 7, and 8, 1896.

(Concluded.)

SECTION ON THE PRACTICE OF MEDICINE.

SECOND DAY—MAY 6TH.

DR. J. W. GROSVENOR of Buffalo, N. Y., read a paper on

THE EFFECT OF ALCOHOL ON THE ORGANS OF SPECIAL SENSE,

in which he took the position that since the discovery of ethylic alcohol no marked difference of opinion among physiologists and therapeutists has ever existed as to the depressing action of this agent upon the organs of special sense, when administered in large quantities. By carefully conducted experiment, it has been shown by Dr. Ridge, that the function of sight and of touch, as well as the sense of muscular weight, are diminished and weakened under the influence of small doses, varying from half a dram to four drams. Dr. Scangel came to the same conclusion, after making a series of experiments upon the sense of hearing. A careful consideration of these and other facts, shows that upon the organs of special sense, alcohol is a paralyzer and a depressant, even when given in small doses. The nerve-cells of the special senses are not so very different from the cells of other parts of the nervous system, as to forbid the belief that alcohol acts as a depressant, and not as a stimulant, upon all the tissues of the human body. This is a perfectly logical deduction from numerous experiments and common clinical observation. This being the case, the medical profession of this country should declare its disbelief in the popular doctrine that alcohol is a stimulant, and also should exert its influence upon the laity to diminish its use. The resort to the administration of alcohol for its supposed stimulant action in cases of cardiac depression, or heart failure, especially during anesthesia by chloroform, or ether, is inadmissible, and is based upon incorrect views. Railroad companies should refuse to employ men as engineers unless they are total abstainers from alcoholic drinks.

DR. PLATT of Massachusetts: If Dr. Grosvenor is right in his conclusions, we certainly are very culpable, as public-minded men, if we do not take the action he has suggested.

DR. WEBSTER of Chicago: Conclusions should not be drawn from the effects of alcohol upon the human body in a state of health which would interfere with its use in disease under proper circumstances and in proper doses. It is not true that under all circumstances alcohol acts as a depressant, and is never a stimulant.

DR. YEAGER, Hammittsburg, Ky.: I have employed it in cases of sickness all my life, and find it necessary in certain conditions for which it is usually prescribed.

DR. H. A. HARE of Philadelphia: I cannot sit still and allow to go, without question, on the records of the American Medical Association, the dogmatic statement of the author of the paper that there is absolutely no evidence in medicine to prove that alcohol is a stimulant. From the results of a large hospital experience, as well as some familiarity with laboratory results, I challenge to the fullest the statement that there is no evidence, scientific or otherwise, that alcohol is not a stimulant. I wish to condemn the tendency at the present day to make sweeping statements, and to say either that a drug is good for everything, or to say that it is of no use whatever. That in proper doses in appropriate cases, it is a cardiac stimulant, is a well-established observation in experiment and practice.

DR. BABCOCK, Chicago, Ill.: I believe that alcohol in proper doses is a cardiac stimulant, but in overwhelming doses it is a cardiac depressant, and my views are obtained from experience and not from experiment.

DR. J. A. OUCHTERLONY of Louisville, Ky.: That alcohol is a stimulant is a fact, and I know it. I was amazed by hearing this elaborate paper based upon such imperfect foundation. I cannot believe that the work of Anstie on "Stimulants and Narcotics" was nonsense. The effects of other remedies are known to us by using our sense and judgment, and, by the same test, we find that alcohol is a stimulant.

DR. MINER of Asheville, N. C.: I would ask the gentleman if he should consider it a legitimate conclusion if drawn from the effects of alcohol in unaccustomed doses? We might as well attempt to draw conclusions regarding the therapeutic action of mercury, by observing the effects of a dose of ten grains of corrosive sublimate. The dose must be suited to the case.

DR. HARE: I charge the gentleman to produce one jot or tittle of evidence to prove that the assertion is correct, that the only stimulating effect of alcohol is "by dilating the arterioles, like nitroglycerin." I can prove that it acts as an arterial stimulant by the experiments of Dr. Cerna. I also point out its effects upon heat production. In small doses it increases heat production, while in overdoses it increases heat dissipation. But careful experiment has shown, even in the latter case where an increased amount of heat is given off, there is still increased heat production, the amount of heat-units are above the normal. The effects of alcohol upon the cutaneous capillaries is that of a stimulant and not that of a paralyzing agent. I desire, in conclusion, to again call attention to the danger of absolute dogmatic statements as to the effects of alcohol, of which an instance is seen in declaring that it acts like nitroglycerin as a paralyzer.

DR. HAINES of Chicago: The objection to regarding whisky as a stimulant, I think, is chiefly sentimental and not based upon scientific fact. Alcohol certainly is a stimulant when given in proper doses and under proper conditions.

DR. JENNINGS of Iowa: I cannot believe that small doses of alcohol can act as injuriously as stated. The

dispute seems to have arisen from a popular misunderstanding of the word "stimulant." Like strychnin and opiates, alcohol should be used judiciously. All are capable of doing harm, but when used in proper cases are very useful.

Dr. Hill, Milwaukee: The difference of opinion arises from studying the effects of alcohol as a toxic agent instead of a therapeutic agent, and from its effects in lethal doses and not physiologic doses. There is a law that any agent which stimulates a center when in certain dose, will depress the same center when given in larger doses. The experience of many years has shown that alcohol is a very valuable stimulant, but its effects are modified by the condition of the patient and the size of the dose.

Dr. Grosvener: It is not a matter of sentiment at all. On the contrary, I have given facts and scientific authority for my conclusions that alcohol is a depressing agent upon the organs of special sense. If there is any scientific evidence that can be presented to me that alcohol is a stimulant, I am open to conviction, but the mere fact that it has been regarded as a stimulant by our forefathers is no reason why we should teach it, as we live in a different era and have more exact information upon which to base our opinions than former generations of physicians.

Dr. W. B. English of Pennsylvania, read a paper on

LYCOPERSICUM IN CARDIOPATHIA.

The Nominating Committee presented its report which was adopted, and the following were declared the officers for the ensuing year: John N. Musser, M.D. of Philadelphia, *Chairman;* T. J. Priestley, M.D., Des Moines, Ia, *Secretary.*

Dr. W. C. Weber of Cleveland, O., read a paper entitled

EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH BY MEANS OF CHEMICAL ANALYSIS OF THE GASTRIC CONTENTS.

The author stated that the absence of hydrochloric acid from the stomach contents was no longer regarded as absolute evidence of cancer. The presence or absence of lactic acid he also considered unreliable. The chemical test he most frequently employed was that of the Congo red. Examination of the blood microscopically he regarded as important to which the knowledge obtained by palpation, percussion, etc., should always be added in our efforts to arrive at an early diagnosis.

Dr. Herrick of Chicago: The reader of the paper made the assertion that Congo red is a test for free hydrochloric acid, but did not mention the fact that Congo red is also a test for any other acid, so that it cannot be relied upon. Boaz makes the statement with reference to Uffelmann's test that it is thoroughly unreliable. I am pleased that the lecturer believes in the value of other symptoms than those relating to the stomach in making his diagnosis of gastric cancer. I think that we fall into grave error when we rely entirely upon stomach contents analysis. The presence of cachexia and the blood examination afford valuable corroborative evidence, even permitting the diagnosis to be made very early.

Dr. Wainright of Missouri: I have been making analyses of stomach contents for the last three or four years and have recognized cancer where there was no clinical diagnosis. I have several times succeeded in making a diagnosis in this way, but never succeeded in obtaining the patient's consent upon this evidence alone sufficiently early for the operation to do good. Later, when everybody notices the cachexia, the patient may consent, but it is then too late for operation. Analyses of the stomach contents incidentally enables us to make a diagnosis between tumors involving the stomach wall and obscure tumors of the abdomen distinct from the stomach.

Dr. Paquin of St. Louis: The subject is one of great importance. I think that we may not be able to make a positive diagnosis by analysis of the stomach contents and a bacteriological test, but examination of the blood will enable us to make an early diagnosis. We can see progress in this disease, especially since early diagnosis permits surgical treatment at the time, when it is alone amenable to such treatment.

Dr. Webber: In reply to Dr. Herrick I would say that he is slightly in error when he said that Congo red responds to all acids. It responds only to mineral acids and is used as a test for mineral acids.

THIRD DAY—MAY 7TH.

A PAPER ON TREATMENT OF CARDIAC DISEASE IN THE QUIESCENT PERIOD,

by Dr. J. W. Byers was read by title and referred.

Dr. Everett Flood of Massachsuetts, read a paper on

INTESTINAL ANTISEPSIS, DIET, AND CASTRATION IN RELATION TO THE TREATMENT OF EPILEPSY,

in which the operation was defended and illustrative cases cited. The operation is less efficient in woman than it is in man. In several cases after operation the patients became more cleanly in their habits and they had a less number of attacks.

Dr. Fenton B. Turck of Chicago, read a communication to the Section based upon

FIVE HUNDRED CASES OF GASTRIC CATARRH.

At first the functions of the stomach are exaggerated, including the secretions, the hyprochloric acid subsequently is similarly affected. The treatment advocated is washing out the stomach, especially with the acid of the "gyromele," which, as it brings away the mucus from the stomach, may be regarded as a valuable aid to diagnosis as well as treatment.

THE DUCTLESS GLANDS,

by Dr. J. M. Marvin of Louisville.

Ductless glands, vascular glands, or glands with internal secretion, as Dr. Marvin prefers to call them, are now attracting much attention in pathology. Some have a twofold function like the liver, in which there is an external secretion of bile as well as an internal secretion, which is equal if not greater in its importance. External secretions are not the most important function of the pancreas. This gland histologically is made up of not only glandular tissue, ducts, etc., but there are scattered

through it peculiar masses of epithelial-like tissue of great vascularity, and this very feature seems to be the clew to follow in the study of the function of these glands generally. If a portion of the pancreas, even of another animal, be grafted into the peritoneal cavity or under the skin, the removal of the entire pancreas will not be followed by the usual symptoms. If the grafted pancreas be removed, then diabetes and death quickly follow. If the grafted pancreas has had its secreting power destroyed by having paraffin injected into its ducts, it will still prevent the occurrence of diabetes.

These facts are very suggestive. It would seem that these highly vascular interstitial islets of the gland are important structures which furnish something to the blood which prevents the undue formation of sugar in the blood and in the urine. This internal secretion perfoundly modifies the carbo-hydrate metabolism of the tissues.

Passing to ductless glands without external secretion, viz.: the supra-renals, thyroid, and the so-called pituitary gland (hypophysis), which are allied histologically and pathologically, we have an internal secretion, which, when poured into the blood profoundly affects nutrition. In pathologic conditions they are alike as one respect, they all show nutritional changes in the skin. Associated with abnormal variations in the secretory functions of the adrenals, Addison's disease occurs; the thyroid hypersecretion results in exophthalmic goiter, diminished secretion in myxedema and cretinism, while akromegaly is in some way related to disease of the pituitary gland. It is further suggested that the Hippocratic fingers and other nutritional changes in the integument and osseous tissues developing in the latter stages of pulmonary phthisis may be due to interrupted function in the bronchial glands.

Dr. Witherspoon of Nashville: The improvement of a case of myxedema in my hands, by the use of thyroid extract, was very marked both physically and intellectually. This method of treatment demands further investigation.

Dr. A. S. Parrish of Boston, presented a paper on

SPASMODIC TERTECOLLIS,

which was read by title.

The section then adjourned.

Section on Children's Diseases.

Third Day—May 7th.

PERTUSSIS AS A NEUROSIS,

by S. J. Radcliffe, M.D., of Washington, D. C.

In this paper the author stated that in fully seventy-five per cent. of cases, the subjects of whooping-cough are neurotics, usually by heredity. The only remedies beneficially affecting the disease are those that have been considered of a constitutional nature, directed to the neurotic element, upon which the pertussis is grounded. Glycosuria is frequently present in cases of pertussis, especially in the severer types of the disease.

The next paper upon

PETIT MAL IN CHILDREN,

was contributed by Louis F. Bishop, M.D., of New York.

Some cases impress one as if the attack of *petit mal* was a development of an epileptic aura, which stopped short of the convulsion, but in some very rare cases there has been a distinct sensory aura preceding the attack of *petit mal*. It is essentially a chronic disease, and therefore it is difficult to formulate the best plan of treatment. However, special stress should be laid upon the care of the stomach, and all those measures included under the name of hygienic management. Bromid in moderate doses has given the best results.

Then followed an interesting article entitled

TREATMENT OF INFANTILE SPINAL PARALYSIS,

by Harold N. Moyer, M.D., of Chicago.

The writer said the cases may be divided into two classes: First, the very severe cases; second, those of moderate severity. The common division between the severe and the graver form is the ability to walk. The treatment should consist in the use of electricity, preferably the faradic current, if you can secure contractions in the paralyzed muscles with the faradic current. If you cannot secure contractions with the faradic current, by all means use the galvanic current, as strong as possible. This treatment must be continued every day for at least a year.

Dr. W. A. Dixon of Ripley, O., reported his

OBSERVATIONS IN CASES OF EPILEPSY FOLLOWING INJURIES TO THE HEAD IN INFANCY, CHILDHOOD, AND EARLY YOUTH.

In the cases cited by the author, as caused by injury to the head, there was no record in the ancestral line of heredity, insanity, inebriety, tuberculosis, or specific infection, and the injury alone remained as the factor.

These papers were discussed at some length.

The subject of

ENTERO-COLITIS

was presented by Dr. Daniel H. Cunningham of Chicago, and

INFANTILE SCORBUTUS

by Dr. Albert H. Burr, Chicago, Ill.

This disease has been only recently recognized in the United States, but soon after the report of the first cases, twenty-six in all, tabulated by Northrup, there have been numerous cases reported from different parts of the country. From this, it would seem, the disease is assuming greater importance, by reason of its increasing frequency in these days of degenerate mammæ, supplemented by the growing indisposition of American mothers to suckle their young, and by the commercial enterprise and ingenuity of man in devising sterilizers and proprietary foods to meet a long felt want in the failing maternal fluid and motherly instincts.

Where the breast milk has failed entirely, or is inadequate, the nearest approach to it is to be found in the modified cow's milk of our modern laboratories, or the home modification of cow's milk after the plans given by Rotch. No continuous administration of any sterilized, pasteurized, peptonized, or condensed milk, or any dry

commercial foods, should be given to the exclusion of fresh or raw elements of diet.

USE OF THE STOMACH AND RECTAL TUBES IN INFANTS, by Dr. W. J. Bell of Atlanta, Ga., was the next paper presented.

By the use of the stomach tube the stomach may be thoroughly cleansed and all the ferment gotten rid of. The author used a tube with a glass funnel at one end, and at the other end a soft catheter, attached by means of an intervening glass tube. The irrigation of the stomach should be continued until the returning fluid is clear. Then the patient should be allowed to rest about an hour before food is given. The same tube may be used for irrigation or for feeding, when necessary. The tube is especially useful in case of poisoning.

In ilio-colitis, gastro-enteritis, fermentative and catarrhal colitis, cholera infantum, and other forms of fermentative and infected bowel contents, most gratifying results are obtained, by high rectal and colon irrigation. The tube should be passed as high as the transverse colon.

Dr. W. A. Dixon, Ripley, O., commended the papers, and especially emphasized the importance of mothers nursing their children.

Dr. J. A. Work, Elkhart, Ind., brought out the fact that the tube acts as an irritant as well as a means of introducing fluid into the stomach.

Dr. Albert H. Burr, Chicago, has found the use of cold water externally and internally far more stimulating than hot water, and would prefer cold water in colonic flushings, since it is better able to cause peristalsis. Following the effect of the poison on the nerve centers, we have first the poisoning, next pyrexia, and third convulsions. The treatment should be, cold bath to reduce temperature, next colonic flushings, then stomach irrigation, and if you think there is anything left, give a good old-fashioned dose of castor oil.

Dr. Harriet E. Garrison, Elkhart, Ind., had found it advisable to substitute Rochelle salt in lemonade for castor oil, because of the unpleasant taste of the latter.

Dr. C. W. Foster, Deering, Me., had usually found the child over the convulsion by the time he arrived, and they remained quiet long enough to get through them a good dose of calomel and castor oil, which seemed to quiet the nervous system. It is all very well for mothers to nurse their children, if the mother is healthy, but often it is not wise if the mother is sickly. There is a great difference in the milk supply of cities and villages.

Dr. E. D. Chesbrough, Providence, R. I., thought a very striking point is the shrinking, anxious expression, found in every case of infantile scorbutus.

Dr. A. C. Cotton, Chicago, referred to a statement, that when a paper is read upon some rare subject, everybody begins for the first time to find that he has a few cases of the same kind. But there is now more scurvy than formerly, due to the fact the country is overrun with artificial foods, persistently advertised by the manufacturers and also by physicians, who ought to know better. In some whole communities exclusive artificial baby feeding is adopted, and the effects are seen in the development of scorbutus.

CIRCUMCISION NOT NECESSARY IN YOUNG CHILDREN,

by Dr. W. B. Parks, Atlanta.

Upon examining a case of long prepuce, a constricting band is found just in front of the glans penis, the action of which pulls downward and forward, lengthening the prepuce. This band, no doubt, is due to an inflammatory process, caused by improper adjustment of the cloths or napkins, keeping the child wet instead of dry.

Treatment without circumcision consists in dilating the prepuce, and breaking up any adhesions of the prepuce. Dilate every second day, leaving instrument in the stretched prepuce from three to five minutes at each operation.

ANNOUNCEMENT.

THE SECOND PAN-AMERICAN MEDICAL CONGRESS.

The Committee on organization of the Second Pan-American Medical Congress has elected Dr. Manuel Carmona y Valle, president; Dr. Rafael Lavista, vice president, and Dr. Eduardo Liceaga, secretary, and has announced November 16, 17, 18, 19, 1896, as the date of the meeting to be held in the City of Mexico.

The most cordial invitation is extended to the medical profession of the United States to attend and participate in the meeting.

Titles of papers to be read should be sent at the earliest practicable date to Dr. Eduardo Liceaga, Calle de San Andres num 4. Ciudad de Mexico D. F. Republica Mexicana.

The date selected is in the midst of the delightful midwinter season when the climate of Mexico is the most attractive to the northern visitor.

The occasion should stimulate the medical profession of the United States to a most cordial reciprocation of the generous patronage accorded the Washington meeting of the Congress by our Mexican confrères.

It should be remembered that the United States is the largest, and in many regards the most important of the American countries and that as a consequence more is expected of it than of any other Occidental Nation. In no particular is this more true than in the maintenance of position in the realm of scientific medicine on the Western Hemisphere. It is, therefore, simply essential that in this Congress—the most important of all Medical Congresses, in its exclusive, yet broad, American significance—the best thought and the best work of the American profession shall be conspicuous in the proceedings.

The zeal and enthusiasm of the Mexican profession and the active interest of the Mexican government are cooperating to make the second Pan-American Medical Congress attractive, important and memorable.

Those who contemplate attending should send their names and addresses at as early a date as possible to Dr. Charles A. L. Reed, St. Leger place, Cincinnati, that the Committee in Mexico may be advised of the probable attendance.

William Pepper,
President,
A. M. Owen,
A. Vander Veer,
Charles A. L. Reed,
Secretary.
International Executive Committee
for the United States.

THE MEDICAL NEWS.
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ORIGINAL ARTICLES.

CÆSAREAN SECTION; SUTURE OF THE UTERUS VERSUS TOTAL EXTIRPATION.[1]

BY HENRY C. COE, M.D.,
OF NEW YORK;
PROFESSOR OF GYNECOLOGY IN THE NEW YORK POLYCLINIC, ETC.

THE presentation of another paper on this subject may appear to be an attempt to reopen an old question, which has been definitely settled by this Society. The subject of Cæsarean section has been so thoroughly studied by our distinguished Honorary Fellow, Dr. Harris, that there remains little more to be said about it, at least as regards indications and results. The same gentleman has shown by his carefully compiled statistics on symphyseotomy how limited has become the sphere of the elective Cæsarean operation. It remains for us to ask whether, in preferring it to a more radical procedure, when performed under absolute indications, we are adopting the same advanced principles which guide us in other departments of abdominal surgery. Lest I may seem to take too radical a position in advocating more frequent resort to total extirpation instead of the more conservative procedure, I would state at the outset that it is my purpose simply to extend the indications originally laid down for the Porro operation in strict accordance with the teachings of modern surgery. The conclusions arrived at, though based upon my own observation and experience, are not new, having been stated in a recent paper by Dr. Edward P. Davis (*Am. Jour. Med. Sc.*, May, 1896), and are offered here in order to evoke a general discussion among those whose opinions carry so much weight.

In the three cases of Cæsarean section which I reported in a former paper (in all of which symphyseotomy was positively contraindicated) the conditions were such that I felt at the time, and have often felt since, that, however successful they may have been from a surgical standpoint, the preservation of the uterus under the circumstances was of doubtful benefit to the patients. One woman, an old multipara, had a small fibro-myoma in the lower uterine segment, which has since increased in size and will eventually require removal, while the patient is constantly in fear of another pregnancy. Another, a miserable tuberculous dwarf (unmarried) did require a second hysterotomy, as I did not see her again until she was eight months advanced. I spared the uterus a second time, but ligated the tubes, and she nearly died from sloughing of the abdominal wound. Between the first and second operations I was obliged to open her abdomen twice in order to separate intestinal and omental adhesions.

The history of a fourth case is as follows:

On February 14, 1896, I was asked by Dr. James Law of this city, to receive into the hospital a patient who had been in active labor (at full term) for eight hours. She was seen by Dr. Malcolm McLean, who expressed the opinion that she could not be delivered *per vias naturales*. She was a primipara, aged twenty-three, who had married a year previously against the positive advice of her physician. She had arthritis of the left hip (presumably tuberculous) at the age of five, from which she suffered for seven years, having had numerous abscesses, with discharge of dead bone, resulting in complete ankylosis, and two inches shortening. Her pregnancy had been normal until the beginning of the last month, when the daily amount of urine diminished greatly, and she had marked edema of the lower limbs. Physical examination: Height, 4 feet 8 inches. Patient extremely anemic, with marked edema of the legs and eyelids. Pulse, 100 and feeble; temperature 99.5° F. Uterine tumor prominent. Uterus drawn upward, and in a state of tetanic contraction, with ring of Bandl marked. Labor pains had entirely ceased. Pelvic measurements: Spine, 7 inches; crests, 7½ inches; external conjugate, 6 inches; true conjugate, 2¾ inches. There was marked lateral obliquity and narrowing of the outlet. The promontory was considerable to the right of the median line, and projected to an unusual degree. Breadth of symphysis, 2 inches. The child appeared to be of medium size, the head presenting O. R. A., high above the brim, the cervix being one-third dilated. It was impossible to cause any descent of the head by external manipulation.

I decided at once that Cæsarean section offered the only chance for the child, and would be fraught with less risk to the mother than craniotomy. Symphyseotomy was, of course, out of the question. The situation was explained to the patient and her husband, who were extremely desirous to save the child. I gave a bad prognosis for the mother.

[1] Read at a meeting of the American Gynecological Society, May 28, 1896.

She was prepared for celiotomy. No urine could be obtained by catheter, but it was evident that her kidneys were seriously affected.

I operated under chloroform and oxygen anesthesia, assisted by Drs. Jarman and McInerny, the former grasping the neck of the uterus after it had been lifted from the cavity. The child (which weighed 6 lbs. 1 oz.) was delivered in the usual manner, and though deeply asphyxiated was revived. The question then arose as to the treatment of the uterus. Although the hemorrhage was slight, the condition of the patient was such that I felt it imperative to complete the operation as rapidly as possible. I believed that I could remove the uterus in less time than I could suture it, and was the more inclined to do this as both ovaries were transformed into cysts the size of lemons. Even if this had not been the case, I would have felt it my duty to prevent the miserable woman from again becoming pregnant. The ovarian arteries were ligated in the usual manner, the bladder was quickly separated and the uterine arteries were tied with the greatest ease. Although the patient was not in Trendelenburg's posture, I never had an easier abdominal hysterectomy. The parts were readily accessible, and the peritoneal folds so loose that they were simply pushed off with the forefinger. Practically no blood was lost. Irrigation with hot saline solution, gauze drainage per vaginam, and closure of the abdominal wound with a single row of silkworm-gut sutures. Time of operation, about thirty-five minutes.

The patient rallied well, but was in a critical condition for several days. The first twenty-four hours she secreted only eight ounces of urine, containing sixty per cent. of albumin and loaded with granular, hyalin, and epithelial casts. Pulmonary edema speedily developed and threatened to terminate fatally, but with careful nursing she was soon out of danger, and her convalescence was subsequently practically afebrile. There was no milk in the breasts. She was discharged during the fifth week, with ten per cent. of albumin in her urine, but no casts, the amount for twenty-four hours being thirty ounces. Both the abdominal and vaginal wounds had healed perfectly at the end of ten days. The patient came to my office two months after the operation in excellent condition. On examination I found that I had unintentionally left a portion of the anterior lip of the cervix. The pelvic roof was as firm as if the uterus had been *in situ*. The child was entrusted to its grandmother, and at once began to fail, being carried off by diarrhea at the end of a month.

In reviewing this most unpromising case, I feel convinced that I acted for the best interests of the patient in deciding upon total extirpation, contrary to the advice of my colleagues. The necessity for rapid work at the time, my doubt as to the aseptic condition of the uterus, and a consideration for the woman's future welfare, all influenced my decision. The question naturally arose: "Would it not have been better if I had adopted the same course in my other cases, where the operation was performed at a time chosen by myself and before labor had begun?" This question suggested this brief paper.

The familiar arguments advanced in favor of suture of the uterus after hysterotomy are: (1) The woman is left with her generative functions unimpaired; (2) The operation is simpler than hysterectomy, there is less shock, and less danger of sepsis; (3) Statistics are in favor of the conservative operation.

If we were considering the so-called elective operation, performed under the most favorable conditions as regards both the patient and her environment, these arguments would be unanswerable. But such cases are often on the border-line, so that it is quite possible that the patient may be delivered subsequently by forceps or version, and, moreover, symphyseotomy now claims a large proportion of them. This leaves us with the cases of impossible labor, in which there can be no doubt as to the indication for celiotomy. In replying to the first argument, it must be admitted that in suturing the uterus we do indeed leave the patient in the same condition in which she was before, but what is her subsequent history? Time was when the surgeon who was able to report a second Cæsarean section upon the same patient was regarded almost in the light of a public benefactor. Repeated section is sufficiently common and successful, but is it, I would ask, a subject for congratulation in this age of progress? Is it not rather a scientific error? I so regarded it in my case.

The earlier editions of our works on obstetrics used to descant on the heroism of those women who were willing to risk their lives a second, and even a *third*, time for the sake of their offspring. Doubtless they are, but what chance do they have for an intelligent choice? Look over the records of these cases, and you will find that the majority of the patients were submitted through ignorance, rather than with the high motive of preserving the child. It seems to me that we carry conservatism rather far when we deliberately expose to the risk of another capital operation a miserable, rachitic dwarf, illegitimately pregnant, whose offspring is predoomed and whose own life is in great danger of being sacrificed to a sentiment, or to a scientific principle, as you will. The desirability of preserving the functions of menstruation and ovulation, whenever possible, is generally recognized, but how often do we sacrifice the uterus and adnexa in the

case of fibroids, which are a far less menace to life than is a second pregnancy in a woman, with an absolute impediment to natural delivery!

Induction of premature labor is, of course, always a possible alternative, but the statistics of repeated Cæsarean operations show that many of these ignorant women do not apply to the accoucheur again until they are too far advanced for its successful application. Craniotomy is too often the necessary result of such attempts at saving the premature child, whose tenure of life is slight at the best.

As to the simplicity of the technic in suture of the uterus there can be no question. That it is unaccompanied by shock is by no means true. In upward of a dozen operations which I have attended there was marked shock in every one, the patient requiring vigorous stimulation. Yet all were in good condition beforehand, and in several, labor had not begun. There is no comparison between the shock in these cases and that in a prolonged hysterectomy for uterine fibroid. Certainly the time necessary to properly complete a Cæsarean section is often greater than in an ordinary hystero-myomectomy. It is granted that sepsis can be eliminated in the majority of cases, at least where there has been no previous manipulation by hands of doubtful cleanliness. But look over our own American records and see how many patients have succumbed to sepsis, even up to this year—not necessarily through any flaw in the technic, but because the operator left a uterus which was already infected. The fact is, that when we are compelled to operate upon patients who have been frequently examined, or subjected to prolonged attempts at delivery, we can never positively eliminate this element of failure, and are obliged to shoulder blame which does not belong to us, and to incur the risk of adding to the unfavorable statistics.

The statistical argument carries little weight nowadays. In my opinion, the former statistics of the Cæsarean and Porro-Cæsarean operations prove nothing, since it is well known that the latter include the majority of the "late" or unfavorable cases. It would be more just to class them under the head of puerperal hysterectomy for septic infection, since the conditions are nearly the same. On the other hand the old Porro operation; with extraperitoneal fixation of the stump, was a crude and imperfect procedure compared with modern total or partial abdominal extirpation. We are making new statistics every year in other departments of surgery, why not in obstetrical?

To return to the alternative—total abdominal extirpation of the uterus and adnexa. The advantages which the radical operation presents are:

1. Rapidity of execution. Any one who has had occasion to perform the operation must have been impressed with the ease with which ligation of the broad ligaments and separation of the bladder can be accomplished as compared with the same steps in an ordinary abdominal hysterectomy. In one of the writer's cases of celiotomy for rupture of the parturient uterus (clamps being used) it required only five minutes, another in which ligatures were used, about ten. It is not necessary to elevate the patient in Trendelenburg's posture. Time is an important factor, especially in cases of women who have been many hours, or even days, in labor, and are in collapse before they are placed on the table. There is no more shock or loss of blood than after suture of the uterus.

2. By removing the entire uterus we are reasonably certain that no infected tissue has been left within the abdominal cavity. In my first Porro case, seven years ago, the patient did indeed recover, but her cervix had been infected before the operation and sloughed out entirely. Free drainage *per vaginam* may save even the most desperate case. No uterine sutures are left to give subsequent trouble, as in reported cases.

3. Neoplasms of the ovaries or uterus, or diseased appendages, are removed at the time, instead of being left to give future trouble. Removal of the adnexa after Cæsarean section, has always seemed to me to be fraught with considerable risk, since the large, soft stumps, with thin distended veins, are exposed to more or less traction during uterine contractions. Fibroids, apparently not large enough to justify a Porro at the time, have been left behind to give subsequent trouble, as in the case cited.

4. Convalescence is quite as rapid as when the uterus is sutured.

In advocating total extirpation of the uterus, under these circumstances, I have no intention of stirring up the old controversy of supravaginal amputation of the cervix *versus* hysterectomy. The results recently reported by Dr. Davis—three operations by which the mothers and children were all saved, are sufficiently convincing to need no comment. Moreover, the similar operation for fibroid tumors in the hands of Kelly, Baer, and many others, furnish statistics which admit of no unfavorable comment. I would only call attention to the fact that Dr. Davis' operations were performed upon patients who could be regarded as positively *aseptic*, so that in dropping the

stump of the cervix he was fairly certain that no infected tissue was left behind to vitiate his own careful technic.

In my own case, and in others in which the surgeon is obliged to operate under less favorable conditions and upon patients who have been subjected to repeated examinations and manipulations, he may well hesitate about leaving the cervix and closing the cavity without drainage. Moreover, the condition of the patient may be such that time is an important element, and I believe that at full term the removal of the entire uterus is a simpler and more rapid operation than supravaginal amputation with such careful suturing of the stump, as is necessary in order to insure a successful result.

In my experience, the objection with regard to weakening of the vaginal roof by removing the cervix is largely theoretical, in puerperal hysterectomy as well as in total extirpation for any cause. I have been looking for a case of vaginal enterocele ever since I began to do the operation, but in an observation of at least one hundred cases in my own practice and that of my friends who practise total abdominal extirpation, I have been unable to find one. Some of the patients have been under observation for two or three years.

To recapitulate: Granting that the indications for Cæsarean section are becoming every year more clearly defined and that the operation will probably be more rarely performed in the future, in every case in which we decide to resort to it we should ask whether we are justified in allowing the patient to incur the risk of a second operation. The way to avoid this risk is to ligate the tubes, to remove the adnexa, or to extirpate the uterus. As experience has shown, the first two procedures do not furnish positive immunity against a second impregnation. Under some circumstances, the surgeon's duty is clear. The presence of extensive disease, or of neoplasms of the uterus and adnexa, bring the case under the ordinary rules of modern surgery. Absolute failure of the uterus to contract after evacuation of its contents (a rare, but not impossible contingency), and undoubted, or even suspected, infection of the organ were long ago recognized as indications for Porro's operation. To this may be added a dyscrasia (as tuberculosis), which renders a subsequent pregnancy highly undesirable. There remains the class in which dystocia is due to marked pelvic deformity.

The wishes of the patient should be considered, when they really carry weight, but I fully agree with Dr. Davis that this rule cannot be universally applied. As he fairly states it: "In women of good constitution and happily married, few will be found who will not desire to retain their power of reproduction. On the other hand, in married women of feeble strength, in circumstances of poverty, the burden of childbearing may well be removed. In women illegitimately pregnant and belonging to the class of professional paupers who are likely to be, with their progeny, a constant burden on the State, the continuance of reproduction is certainly to be avoided. Most of the latter class have little conception of the responsibilities of maternity, and even if asked to make a choice, are incapable of doing so intelligently."

COLPOPERINEORRHAPHY.[1]

By H. J. GARRIGUES, A.M., M.D.,
OF NEW YORK, N. Y.;
PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE NEW YORK SCHOOL OF CLINICAL MEDICINE, HONORARY CONSULTANT TO THE NEW YORK MATERNITY HOSPITAL, GYNECOLOGIST TO ST. MARK'S HOSPITAL, ETC.

TWICE I have published papers on the perineum. The first (*American Journal of Obstetrics*, April, 1880) treated only of fresh tears, the second (MEDICAL NEWS, April 25, 1891) gave a detailed description of the anatomical relations of all so-called lacerations of the perineum, old and fresh. To-day I wish only briefly to recall the chief anatomical facts of these lesions in general and give a detailed description of one operation for the most common of them.

The old authors used the expressions *vulva*, *matrix*, and *uterus* to designate the whole genital tract from the rima pudendi to the fundus uteri, and laymen now frequently use the word *womb* in this sense. While every scientific writer nowadays distinguishes the uterus from the vagina, many still confound the latter with the vulva, although there is as distinct a limit between the two latter as between the two former, the line of demarkation being the hymen or its remnants, the carunculæ myrtiformes.

There are at the perineal region three rings which are of importance in the understanding of perineal lesions, the vulvar ring—or rima pudendi; the vaginal ring—or introitus vaginæ—and the anal ring. Any of the three may be ruptured separately in childbirth, or the injury may involve two or all of them.

Of all the muscles contributing to the formation of the vaginal ring, the *levator ani* is by far the most important. It forms a horseshoe-

[1] Paper read by invitation at the Fiftieth Anniversary of the University of Buffalo, N. Y.

shaped expansion, which is open in front, is attached in a wide circumference to the walls of the pelvis, and forms a double loop behind the vagina and the rectum.

This muscular expansion, a true pelvic diaphragm, is covered above and below with a fascia; above lies the rectovesical fascia, which is a part of the pelvic fascia, and below the anal fascia, which is a part of the deep perineal fascia.

Between the vulvar and the vaginal ring in front and the anal ring behind lies the perineal body, which forms the center of the whole perineal region, where muscles, fasciæ, and ligaments come together. As these are fastened themselves to the surrounding bones, the perineal body becomes the chief support of the pelvic floor.

I have chosen colpoperineorrhaphy for the subject of this paper because it is the remedy for the most common of the tears near the outlet of the parturient canal and because, through a mistake in the publisher's office, the figure in my work on "Diseases of Women" meant to illustrate the operation is defective.

The deep tear of the vaginal ring, implicating the levator ani muscle and its fasciæ is usually found backward and outward in the direction of the tuberosity of the ischium, the reason of which is probably that the muscle is caught between this point and the head, while in the median line the intervening rectum and the double fascia that descends in front of it as a continuation of the pelvic fascia furnish a soft pad which protects the muscle. The break is much more common on the right than on the left side, which probably is due to the preponderance of the first position of the vertex presentation. The occiput escapes under the rami of the left pubes and ischium, while the broad forehead continues to press in the opposite direction on the posterior wall of the vagina.

Sometimes, however, the edge of the A-shaped break in the levator ani can be followed behind the rectum over on the opposite side. Sometimes the tear is submucous, the muscle snapping while the more elastic mucous membrane stands the strain.

A tear involving the levator ani and its fasciæ deprives the pelvic structures above of the necessary support. As soon as the patient gets up from childbed she has a disagreeable feeling of looseness and bearing down. In course of time the mucous membrane bulges out in front and behind, the bladder sinks down, the uterus is first retroverted, then retroflexed, then it descends, and may finally hang, surrounded by the inverted vagina, between the thighs. The strain on the utero-sacral ligaments, the broad ligaments, and the connective tissue of the pelvis, causing pain in the sides of the pelvis and backache. The displacement interferes with free circulation in the pelvis, causes a sensation of heaviness, and produces hyperplasia of the uterus. The vagina is inverted, the cervix is often drawn out to a great length, its lips everted, and often ulcerated.

The prolapse of the anterior wall is correctly called *cystocele*, because almost always the bladder, being fastened to the vagina with short, resistant, connective tissue, is drawn down with it and lies in the anterior swelling.

The prolapse of the posterior wall is erroneously designated as rectocele. I say erroneous, because the rectum nearly always stays in its normal place, while the vagina slides away from it, the connective tissue here being much looser and laxer than that between the bladder and the vagina.

For this condition of a broken vaginal ring, with a more or less pronounced prolapse of the posterior wall of the vagina, whether combined with a tear of the vulvar ring or not, I think colpoperineorrhaphy is the best operation.

The operation consists in the removal of a triangular piece of the mucous membrane of the posterior wall of the vagina and the vulva, in the folding in from side to side of the denuded surface, and in the elevation of the posterior wall toward the anterior.

Preparation.—The patient's bowels are emptied by means of a heaping teaspoonful of compound licorice powder, given the evening before the operation, and an enema of a quart of soap-suds, given at least six hours before the time set for the operation.

The hair should be shaved off the labia and the anus, but may be left undisturbed on the *mons veneris*. The vulva and the vagina are scrubbed with tinct. saponis veridis, followed by several quarts of a solution of bichlorid of mercury (1–2000).

The patient is placed in the dorsal position and her feet raised, with more or less bent knees. In private practice I use Robb's leg-holder for the purpose; in hospital practice, the feet are fastened to uprights with stirrups.

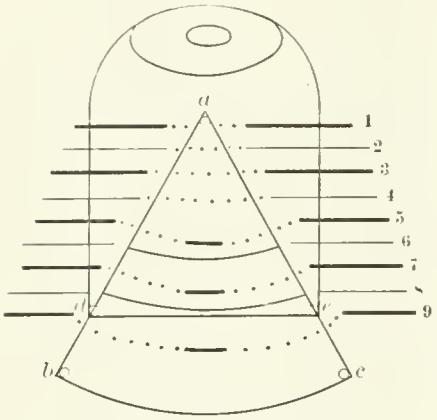
The operator sits in front of the field of operation and an assistant stands on either side, in order to sponge, irrigate, stretch the tissues, and help in inserting the sutures.

The operation should be performed with almost mathematical exactitude, beginning by placing certain landmarks.

A point is chosen on the mucous membrane of

either labium majus, near the edge of the same, and at such a distance from the clitoris that after the operation an opening is left of suitable size for copulation. These two points (*b* and *c*) are

Fig. 1.



Denudation and vaginal sutures.

marked by making a small nick with curved scissors in the mucous membrane.

Next the assistants spread open the vulva and vagina by pulling the labia majora apart in a transverse direction. The operator chooses a point in the median line of the posterior wall, as high up toward the cervix as the prolapse goes (*a*), and seizes it with a bullet forceps with catch, pulls it forward and upward, putting the mucous membrane on the stretch, and leaves the forceps in the hands of the assistant to the left of the patient. Next he draws imaginary lines from this point to the two nicks on the labia majora, and where these lines intersect the lateral furrow of the vagina (*d* and *e*) he inserts another bullet forceps, or preferably a strong tissue-forceps, which does not tear out so easily as does a bullet-forceps, or, still better, a tenaculum-forceps.

Next, a small hole is cut in the mucous membrane just inside of the two lateral pairs of forceps. A pair of blunt scissors, curved on the flat, are introduced closed through the opening on the left side, with the concavity turned toward the operator, and pushed up to the median forceps, and then across to the other side and out through the opening there. Next this triangular flap is cut loose on both sides. If an artery spurts, which is exceptional, it is compressed with pressure-forceps or tied with fine catgut.

Next, the scissors are entered through the opening on the left labium majus (*c*), and pushed up to the forceps in the lateral furrow (*e*), and down to the line of demarkation between the mucous membrane and the skin (*b c*), thus loosening the whole mucous membrane on this side.

Next, the scissors are entered through the opening on the right side (*b*), and this half is loosened and, finally, the whole piece is cut loose along the edge (*e c*, *c b*, *d e*).

While the upper part of the triangle is loosened very easily, there are often cicatrices in the lower part, which have to be severed with small nicks made with the opened scissors.

This way of denuding penetrates much more deeply than if only a superficial layer is cut off from the mucous membrane, and it causes less hemorrhage than if the same amount of tissue is removed with the knife.

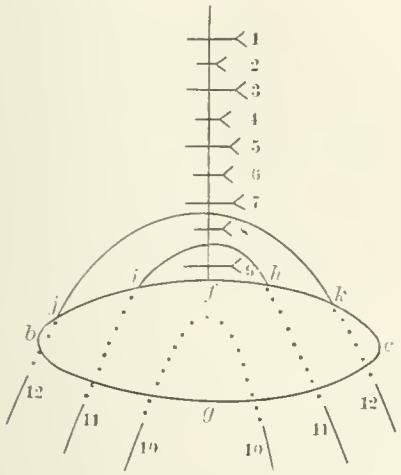
The second step in the operation consists in the insertion of sutures. I use silk, braided No. 4 for the deep vaginal, braided No. 2 for the superficial vaginal, silkworm-gut for the deep perineal, and fine catgut or silk for the superficial perineal. Large curved Hagadorn needles are very serviceable for all the sutures.

The sutures are put in from side to side, beginning from the top of the triangle (*a*), alternating deep and superficial ones (1 to 9, dark lines, deep sutures; light lines, superficial), and leaving a quarter of an inch between two and two sutures. They are tied immediately and cut short. The superficial (2, 4, 6, 8) go only through the edges of the mucous membrane. The deep ones go in the upper part horizontally from side to side and under the whole surface. When the surface becomes too broad, the needle is brought out a quarter of an inch from the median line and inserted on the corresponding point on the other side. The sutures are also placed in a slanting direction (5, 7, 9) so that, when tightened, they lift the posterior wall up, having a resisting point behind where the lateral sulcus is yet fastened to the pelvic bones with fasciæ. Thus we proceed all the way down until the distance from the last suture to the landmark on the labia (Fig. 2, *f c*) is equal to that from the latter point to the median line, following the skin (*c g*). About five deep and four superficial sutures are needed. This leaves us a surface to be used in forming a perineum.

For this purpose, three sutures are inserted from the skin. The first (10) enters about half an inch from the median line and three-eighths of an inch from denuded surface, and is carried all under the surface about two-thirds of the distance up to the lower end of the closed line of sutures (*f*). The second (11) is inserted midway between the first and the third, and is brought out on the upper edge of the denuded surface, between the inner and middle third of its length

(*h*), reinserted at the corresponding point of the opposite side (*i*), carried under the denuded surface and out on the skin. The third (12) is inserted outside of the outer end of the wound (*c*), carried under the denuded surface, brought out on the upper edge between the middle and outer third of its length (*k*), inserted at the corresponding point of the other side (*j*), carried under the denuded surface, and out through the skin outside of the right end of the wound (*b*). These

Fig. 2.



Vaginal sutures closed. Perineal inserted.

three sutures are seized singly with forceps as soon as each is put in, but not tied until all are in place, and the surface has been well irrigated.

The direction given to the sutures insures a very perfect adaptation of the edges and makes the surfaces brought in contact with one another sufficiently broad to form an excellent substitute for a perineal body.

In order to obtain union of the skin, which is always the most difficult, I introduce a couple of superficial sutures between the deep perineal sutures. (Fig. 3. 1, 2, 3).

As the deep sutures are passed close up to the rectum it is necessary to guide the needle with a finger introduced into that viscus. This is much against the rules of aseptic surgery, but of two evils the lesser should be chosen, and by washing the finger in a solution of bichlorid of mercury each time it is withdrawn from the intestine, the danger of wound-infection is at least diminished. As a matter of fact I can state that all my cases, and I have operated on a considerable number, have healed by first intention.

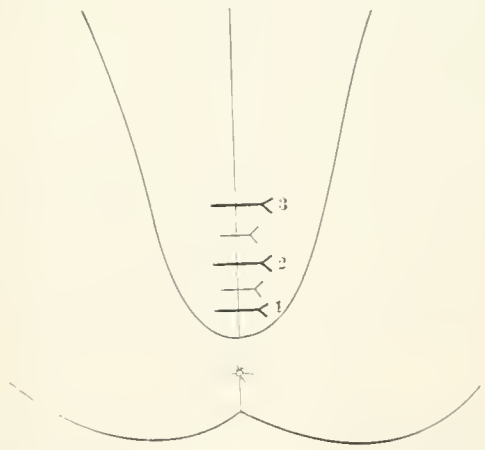
The perineum is covered with a pad of iodoform gauze and plain sterilized gauze kept in place by a T-bandage, and the knees are tied together.

After-treatment.—The patient is kept in bed for two or three weeks. At first there is usually some pain calling for small doses of morphin, but opiates should be avoided as much as possible as they produce hard stools. The urine is drawn with catheter for the first few days. On the morning of the fourth day the bowels are moved with three fluid drams of castor oil, and when the patient feels that she is going to have a passage four ounces of olive oil are injected into the rectum. After that about two fluid drams of castor oil are given every morning, enough to have an easy movement once or twice in twenty-four hours. Before the bowels have been moved the diet should consist exclusively of albuminoid food, such as milk, eggs, beef juice, and raw oysters, so as to have as little fecal matter as possible. Later the patient is allowed full diet.

She may lie on her back or on her sides, but should move slowly and be assisted by a nurse in turning over. The knees should be kept tied together for two weeks, but not tighter than to allow some movements, the object being only to prevent so much spreading of the thighs that the perineal sutures are strained.

The dressing is changed daily. When there comes some sero-purulent discharge, vaginal injections with carbolic acid or lysol should be given twice a day. If the discharge is bloody, liquor ferri chloridi, half a teaspoonful to a pint of water should be given three times a day.

Fig. 3.



Perineal sutures tied.

In order to avoid the formation of a perineal fistula, I remove the middle perineal suture on the fourth day. The two other perineal sutures are removed on the eighth day, the vaginal sutures at the end of three weeks. For this last part I introduce a virginal Sims' speculum under the symphysis pubis.

The patient should be cautioned not to have sexual intercourse for two months.

The objection has been made to operations of this kind that they bring together parts which normally are not united. That is true, but since we cannot repair the damage made in the levator ani muscle and its fasciæ, we must be content with supplying a substitute for the original support. The operation produces a solid perineal body and one which is suspended from the pelvic bones above, just as in the normal relations.

The results show the value of the operation. The bearing-down pain and the headache cease immediately. I have seen cases again after years and found them in excellent condition. I have even confined patients upon whom I had operated. Then, of course the perineum is partially torn, but we get only the two well-known triangles, that are so common in primiparæ, and which are easily brought together with three perineal sutures put in as described above.

My operation differs from Hegar's in the following points: (1) The blunt, deep denudation. (2) The slanting direction of the vaginal sutures, which lift the posterior wall up against the anterior. (3) The slanting direction of the perineal sutures, which insures a more perfect adaptation of the edges.

Combination with other Operations.—Often the injury present demands other operations which may be performed at the same time. If the cervix is torn, it should be repaired and stitched with chromicized catgut, since it would jeopardize the perineum to stretch it with a speculum sufficiently to remove cervical sutures.

If there is a cystocele I use Stolz's operation—circular denudation and purse-string suture. If there is retroflexion I combine colpoperineorrhaphy with Alexander's operation—extraperitoneal shortening of the round ligaments.

CONCERNING BRIGHT'S DISEASE.[1]

BY G. J. TWEEDY, M.D.,
OF WINONA, MINN.

THE early history of medicine, as of all sciences, shows a tendency to differentiate rather than to generalize, due, in large measure, to the fact that clinical phenomena formed the sole basis of medical study, while pathological knowledge was slight. At the time of Bright the anatomico-pathological basis was in vogue, with the anatomical element decidedly in the front. Bright's disease was, therefore, at that time purely a disease of the kidneys. An increased knowledge of the pathological processes involved, and the intimate relation existing between all the organs of assimilation and excretion and the vascular system, has led to a gradual increase in the comprehensiveness of the term in both the causative and pathological lines. At present we know that all forms of Bright's disease are secondary and often directly dependent upon previous disturbances in the general processes of assimilation and retrograde metamorphosis, or as excited by some blood poison. Every form of the disease is directly traceable to an irritant brought to the kidney by the blood, or to mechanical disturbances of the circulation which affect other organs as well, or to a combination of the two. The most constant and diagnostic symptom of this condition is the presence of albumin in the urine; but this alone is not to be relied on, as Bright's disease may exist without albuminuria; and on the other hand albuminuria occurs in a great many instances which are not Bright's disease, and rapidly terminate in complete recovery.

Albuminuria may be divided into physiological and pathological, and it becomes an exceedingly important point to determine when albumin in the urine is significant of organic change, as well as to ascertain what relation so-called physiological albuminuria may hold to subsequent changes. The passage of albumin from the blood into the urine is dependent upon some functional failure on the part of the epithelium of the glomeruli. This is easily understood when some inflammation or degeneration exists, but in cases where the albumin is due to nervous influences or to maintain an equilibrium in the nutritive elements of the blood, and we say that it is a "temporary functional disturbance," such an expression does not convey to my mind a very clear idea of what really takes place. I presume the solution of it can only be clinical.

An albuminuria occurs: (1.) In all the distinctly infectious diseases, and is due to those chemical products of bacteria known as ptomaines, probably assisted by the high temperature, vitiated blood, and disturbed circulation. (2.) It is caused by irritating drugs, such as cantharides, turpentine, etc. (3.) It occurs in certain diseases of the brain and cord. (4.) In some chronic diseases marked by certain changes in the blood, and in mechanical disturbances of the renal circulation, such as tumors.

The albuminuria brought about by pregnancy illustrates the part played by irritants in the blood and pressure on the circulation; the enlarged uterus

[1] Read before Winona (Minn.) County Medical Society, April 7, 1896.

causes obstruction to the circulation and consequent hyperemia and hyper-excitability. The tissue changes in the growing fetus are exceedingly rapid, so that the extra amount of excrementitious matter removed by the maternal organs, is increased in far greater ratio, than it would be if her own tissue were increased by an equal amount in weight; thus we have not only the hyperemia of pressure, but also of excessive activity and direct irritation set up by the increased excrementitious matter. A very large percentage of all these cases rapidly recover when the cause or causes are removed, but if the irritation or disturbance be kept up too long, or a predisposition inherited or acquired exist, degeneration and destruction take place. Bright's disease may then be defined as a "non-suppurative inflammation of the kidney, with manifestations determined by its etiology, the special elements affected and the inherited tendencies of the patient;" but the heart, blood-vessels, liver, and kidneys are so intimately related, that it is impossible to consider one without the other, and in order to get at a proper basis let us consider blood-pressure.

In early life there is a low blood-pressure and a rapid pulse-rate. This low blood-pressure is due to the fact, that the arteries are large in comparison to the heart and the length of the body, and the rapid pulse-rate is due to the shortness of the circuit traversed by the blood. These conditions prevail during early life, more especially the first year. During this time growth is rapid because of the fluid food with which every part is flushed, and the whole body grows in every part, but the growth of the arteries in caliber does not keep pace either with the growth of the body in length, or with the growth of the heart in size and strength. The natural result is a gradual rise in blood-pressure and an equally gradual slowing of the pulse-rate, until early manhood when the growth is complete and the blood-pressure reaches its highest normal. But as development progresses, the arterial coats slowly undergo a change of structure, by which they lose their elasticity and become gradually converted into more or less rigid tubes. The effect of this loss of resilience in the arterial coats is that while these coats yield as formerly to the advancing blood-wave, they yield more slowly and they do not entirely recover themselves, so that the lumen of the arteries undergoes a gradual dilatation. From the dilatation of the arteries there is a tendency to lowering of the blood-pressure, but the cessation of active growth makes a large network of capillaries unnecessary and many of them obsolete, giving rise to the wrinkled skin, gray hair, and other evidences of age. But, by the time the heart has succeeded in permanently dilating the inelastic arteries, and has restored them to their former relative size the increase of the peripheral resistance due to the withering of the capillaries is sufficient to counterbalance any material lowering of the pressure; but, generally speaking, in health there is a slight fall in the blood-pressure as age advances.

We always have an increased blood-pressure during and preceding Bright's disease, the nephritis being merely concomitant and secondary to the general systemic disease. A case of Bright's disease that means not only a degeneration in the kidney but in the vascular system generally, there is quite sure to have been a previous stage of increased blood-pressure with hypertrophy of heart and blood-vessels. The most frequent cause of increased blood-pressure is undoubtedly irritation by some foreign elements in the blood, or an excess of normal elements demanding removal. Irritation is but a step beyond stimulation, and degeneration is the direct consequence of excessive activity, so that all those elements which excite normal action of the kidney and blood-vessels may, when in excess, lead to inflammation and degeneration. Of these the most frequent, the most persistent, and the most injurious, is uric acid. Or, to reverse the order, and give it as it occurs: over-indulgence in nitrogenous foods, uric acid in excess, increased blood-pressure, hypertrophy of heart and blood-vessels, degeneration and disintegration. This hypertrophic condition preceding the degeneration, takes place in the muscular coat of the blood-vessels which has been developed as a conservative process and has become converted into a pathological one secondarily. This illustrates a truism we should never fail to recognize, viz., that many processes which we call pathological, and which, in their fullest development, tend directly to death, are at the beginning strictly conservative, and should be recognized as nature's measures for bringing about a cure.

But all persons who have an increased blood-pressure with an irritant in the blood more or less constant, do not have Bright's disease. There is another important factor in the causation, and that is a peculiar fibroid diathesis inherited or acquired. Thus, Bright's disease may be said to occur in two classes of cases.

1. Those suffering from a peculiar condition in which all forms of irritation tend to the induction of fibroid inflammation, not only under a stimula-

tion (which in other individuals would produce only a healthy nutritive activity), but even in what would be considered purely physiological conditions.

2. Those in whom, either through an inherited or acquired functional weakness of the organs of direct and retrograde metabolism, or on account of intemperance in food or drink, the kidneys are for a long time called upon to eliminate both an excessive quantity of the normal elements of excretion and also products of faulty metabolism.

Since tastes, habits, and moral qualities are inherited as well as physical defects, we often find individuals with the weak power of metabolism following up those perverted habits which brought about those weakened conditions of their ancestors, until eventually a set of individuals is developed who combine a marked fibroid diathesis with functionally weak livers, hearts, blood-vessels, and mucous membranes, and for whom we can predict a premature death, from either apoplexy, cardiac failure, or Bright's disease, unless prevented by a proper regulation of habit and diet.

I have endeavored to treat this subject from its causative and pathological point, and to illustrate the underlying principle, rather than to simply state facts; and in the treatment, I shall continue in a general way, without going into the individual forms of the disease. As a matter of course, the treatment of amyloid degeneration coincident with prolonged bone suppuration or syphilis, would vary in detail from the treatment of acute Bright's disease subsequent to an attack of scarlatina; but I think the principle involved is the same.

The preventive treatment will begin long before the appearance of albuminuria or dropsy. When the patient comes with the uric acid diathesis, complaining of headaches, depressed feeling, attacks of irritability, tendency to rheumatism and gout, then is the time to begin the prevention of Bright's disease by a proper regulation of food, drink and habits, suitable to maintain a condition of health with the least possible amount of irritation. Here I should like to read from Balfour's work on the senile heart, a statement also applicable to diseases of the kidney. "Moderation in all things is the true secret for preserving a sound mind in a sound body, and, if it be not a certain passport to longevity, it at least enables us to live healthily for as long as we may. In these days when every doctrine is a fad and gets pushed to an extreme, there are multitudes eager to enforce a rapid teetotalism upon all their fellow-men, as the only panacea for health, happiness, and longevity. But if we except the votaries of vegetarianism, which is more of a cult than a protest against excess, I know of no society that inculcates by precept or example, temperance in regard to food; yet there is nothing ages a man or woman so rapidly, there is nothing that shortens life so certainly, and there is nothing that embitters the latter days of life so much as over-indulgence in food." Bearing in mind the physiological process of digestion of the various foods, and which bear heaviest on the different organs of digestion, it will usually be not difficult to formulate a diet that will insure the least possible amount of irritation in the blood. If the disease becomes established we find several indications presented for consideration.

In relieving the kidney, both from functional activity and the irritation of its products, of excreta—normal and excessive—acid urine and partially converted elements of retrograde change, the two available channels for vicarious elimination of urea, are the bowels and skin. The bowels are the more important channel, and for its successful accomplishment two things are necessary: an active condition of the bowels, and some element which shall render the excrementitious matters as soluble as possible. Calomel is to be preferred. Its action may be regarded as threefold. The increased hepatic activity results in a more complete metabolism of the waste materials in the blood and their partial excretion in the bile. The total quantity remaining in the blood for further removal is thus not only lessened, but the metabolic processes are more complete, and the elements of excretion are rendered more soluble and less irritating to the kidney, the bowels, and the skin: urea being much more readily eliminated than uric acid. And, lastly, the cathartic action of the bile is entirely sufficient for the rapid removal of all the intestinal excretions, at the same time that its antiseptic action prevents any tendency to ammoniacal decomposition in the intestine.

During this time, waste of water and albuminous elements must be freely compensated for. Elimination of urea being not only favored by high dilution, but it becomes far less irritating. The restoration of the lost albuminous elements is best accomplished by the free use of milk. When, however, dropsy is to be reduced by the bowels, entirely different conditions prevail, and instead of calomel, a highly irritating cathartic, producing watery evacuations, is more desirable. For producing activity of the skin, the hot-air bath is most desirable. The use of philocarpin is generally

contraindicated except, perhaps, in an urgent case of uremia or pulmonary edema developed suddenly. The bowels and skin, being attended to properly, they should be regarded as merely palliative or adjuvant to more direct treatment of the kidney.

In the kidney there are three indications: First: To remove as far as possible the inflammatory products, degenerated epithelium and cellular infiltration of the tubules, by increasing the amount of watery elements in the urine and flushing out the kidney. For this pure water is best, of drugs digitalis is best, and had better be combined with an alkaline water until the quantity of urine is increased. The activity of the kidney and the mechanical removal of tubular *debris* are retarded by the congestion of the kidney, and this gives us the second indication, viz., the relief of congestion. This is best accomplished by hot applications to the loins. Poultices or hot-water bag, by equalizing the circulation, favor and assist the action of the remedies mentioned. The third indication concerns the effects of the retained excrementitious products upon the nervous system. Special reliance is to be placed on hypodermics of morphia and enemata of chloral hydrate; only in extreme cases are anesthetics required. In addition to this, in the chronic forms of the disease, especially the so-called parenchymatous form, iron tonics and cod-liver oil should be employed to arrest, if possible, the degenerative changes and tone up those parts of the kidney which are still healthy, or in which the degenerative processes have not rendered activity impossible.

CLINICAL MEMORANDA.

A CASE OF INTESTINAL OBSTRUCTION. OPERATION, AUTOPSY, AND PATHOLOGICAL REPORT.

By T. A. FELCH, M.D., and CARL C. WARDEN, M.D., of Ishpeming, Mich.

An Englishman, laborer, aged twenty years, was first seen by Dr. Felch in May, 1895. Family history negative. The patient had been blown some distance, through a window, by the force of an explosion, falling upon the buttocks. He complained of pain in the left iliac region and of constipation. Examination elicited pain, and revealed a soft tumor in the region of the sigmoid flexure, due to an accumulation of flatus. A dose of magnesium sulphate relieved all symptoms. Subsequently the patient had repeated attacks of a similar nature, with symptoms more aggravated, and seemed to lose weight. Catharsis always brought relief. On October 1, 1895, Dr. Felch found the patient pale and cachectic, eyes bright, features anxious in expression. Dorsal position with knees flexed on the abdomen. Tongue large and flabby and coated with a brown fur. Respirations shallow, rapid, and costal. Temperature 104 F.; pulse 120. Abdomen enormously distended and tympanitic. Vomiting fecal in character. He complained of pain all over the abdomen, and could not bear the weight of the bedclothes. Had had no movement of the bowels for twenty-seven days, but occasionally passed a little flatus. Rectal examination revealed nothing.

The diagnosis of intestinal obstruction, with probable seat of obstruction at the sigmoid flexure, was made. Copious enemata were given, without effect. Operation was advised as a last resort, and eagerly accepted by the patient.

The abdomen was opened in the median line by an incision extending from an inch above the pubes to a point midway between the ensiform cartilage and the umbilicus. Coils of enormously distended and greatly congested intestines presented, and were covered with hot, sterilized towels. The cecum was full of gas, and the ascending and transverse colon packed with the fecal accumulation of nearly four weeks' time. The sigmoid flexure was greatly distended, almost gangrenous, and tightly bound down by adhesions. Immediately below was felt a hard, nodular mass of irregular outline, occluding the lumen of the gut for about two inches. An inguinal colotomy was at once performed, and the gut irrigated with warm, sterilized water, through the artificial anus. Great quantities of fecal matter came away, but it was impossible to dislodge the masses in the ascending colon.

The patient's condition demanded a speedy termination of the operation, but it was found that the coils of intestine could not be returned to the abdominal cavity, on account of the extreme distention. Incisions were accordingly made in them, and subsequently closed with Lembert sutures. The abdominal cavity was then washed out with moderately hot sterilized water, the intestines returned, the wound closed, and a dressing applied. A rubber tube of large lumen was wrapped in sterile gauze and inserted in the artificial anus. A voluminous pad of antiseptic gauze was placed over this opening to catch all discharges. During the operation active stimulation was necessary. The patient was then put to bed, but succumbed in four hours.

An autopsy was held, and the rectal tumor removed for pathological examination.

To Dr. George Dock of Ann Arbor we are greatly indebted for the following report:

"*Dear Dr. Warden:* Your specimen from the rectum (hardened in Müller's fluid and alcohol) consists of a section of the intestine, with part of its attachment. The ends appear normal. The middle part is hard, of the same diameter as the ends, strongly curved, and measuring 8.2 cm. in length on the convex side. The peritoneal surface is smooth for the greater part, but in one place rough, as if the seat of inflammation. Cross-sections show an annular new growth, causing marked thickening of the submucosa. In some parts, the mucosa and muscularis are very narrow. The new growth also in-

vades the mesentery in some places. The thickness of the intestinal wall varies from 5 to 10 mm. The lumen is much contracted, measuring in most places involved by the growth between 4 and 8 mm. in diameter, in some parts being almost totally occluded.

"Sections cut from various parts were stained in various ways. Both in the involved and apparently normal parts the staining is imperfect. In the apparently normal parts the mucosa shows extensive small-cell infiltration, with excessive mucous degeneration of the tubular epithelium. In the involved parts, the mucosa shows extensive infiltration, sometimes appearing as granulation tissue, with remains of tubules. There are extensive areas of degeneration, with sloughing, reaching almost to the submucosa. In many places the muscularis mucosæ is absent, the granulation tissue and remains of the tubules being immediately above the new growth. This latter is alveolar, with narrow septa, containing few nuclei and few and small blood-vessels. The roundish or irregular alveoli contain more or less degenerated cells. In a few places these are roundish or polygenal, with protoplasm, which stains well with eosin, and small, roundish nuclei. For the most part, however, the alveoli are filled with roundish masses of colloid material, in which nuclei can rarely be recognized. Other cells are occasionally encountered which are only partially degenerated, the protoplasm containing round granules of colloid material. The new growth extends into the circular muscular coat irregularly, and, entirely replacing the submucosa, is from 3 to 5 mm. wide. In some places the circular muscular coat contains isolated alveoli; in others, rows of colloid cells, or larger rows of small, round cells. These latter stain poorly, so that details of the nucleus cannot be made out well, but are probably polynuclear. Other masses of colloid cells occur in the longitudinal muscular coat and beneath the serosa, sometimes reaching a thickness in the latter of 4 to 5 mm.

"The specimen is one of colloid cancer of the rectum, with ulceration, and effectually obstructing the lumen of the gut at that part. It is interesting on account of the patient's age, cancer of the rectum being uncommon in early life. Yours very truly,

George Dock."

REPORT OF TWO CASES OF SURGERY OF THE BILE PASSAGES WITH COMMENTS.[1]

By SCHUYLER C. GRAVES, M.D.,
of Grand Rapids, Mich.;
Consulting Surgeon to the U. B. A. Hospital and Surgeon to the Children's Home.

When one undertakes the discussion of the surgery of the bile ducts he must needs realize the limitations by which he is surrounded, for few as yet have had a very extended experience in this department. Although work along this line, as in other branches of surgery has, after a fashion, been done for many years, really modern procedures having been recommended by Petit as long ago as 1733, it nevertheless can be said that in this work we are touching upon a phase of the newer surgery. Especially is this true in its bearing upon the surgery of the common duct.

The surgery of the gall-bladder and ducts has lately undergone much scientific evolution, as the result of which many sufferers are restored to health and usefulness who hitherto have been abandoned to lives of torture and to lingering deaths. Those who have endured the pangs of biliary colic or who have witnessed the distress of others afflicted with temporary or permanent obstruction to the out-flow of bile, can realize the value of the hopes made possible by the development of an ever beneficent art.

Case I.—Mrs. M., aged thirty-two, weight 140 pounds. Since childhood patient has suffered from attacks of biliary colic. These occurred at intervals, varying from several days to several years. Early history of jaundice, but none since she was ten years of age. Agonizing epigastric and occasionally *left* hypochondriac pain, with chill, fever, and sweat, generally following a meal, and always, of late, following a heavy meal. Attacks recently very frequent. Marked dysmenorrhea, the biliary pain often following that of the former. (Having been considered by several physicians as a reflex of the altered menstrual *molimen* uterine dilatation was done with no effect upon the epigastric distress). Gall-stones were never noticed and true condition was unsuspected. A diagnosis: Ordinary cholelithiasis with periodical expulsion of calculi was made.

On July 3, 1895, at the U. B. A. Hospital, Grand Rapids, a right-angled incision (right hypochondriac region and linea semilunaris) was made, the gall-bladder located and found to contain stones. None were discoverable in cystic or common ducts. Viscus was stitched to parietal peritoneum with fine, aseptic silk, and wound closed with worm-gut sutures, except directly over fundus, which portion was packed with iodo-gauze and patient put to bed. Operation was difficult because of an excessive amount of adipose, the top of stitched bladder lying at least two inches below level of integument. Five days later (July 8th), without anesthesia, the organ was incised and twenty-one calculi, the size of beechnuts, removed by means of a dull, uterine curette. Cavity explored with finger and washed out, but no more stones found. Bile was dark, thick, and stringy. Rubber drain placed in bladder and external wound repacked with gauze, Three days later (July 11th) a hemorrhage occurred. It was found that the bleeding came from the interior of the gall-bladder. Several large, black clots were gently curetted away, but bleeding becoming quite brisk, both cavity and wound were packed with gauze. This tamponade controlled the flow sufficiently to prevent alarming symptoms, but the withdrawal of the gauze was invaribly followed by a recurrence of the hemorrhage. Finally the abdominal wound alone was packed, leaving the gall-bladder to fill with blood in the hope that coagulation would correct matters. This idea proved a happy one and there was no further bleeding to any extent, although the stools for several days were very black and tarry. This indicated escape of blood from the gall-bladder into the bowel, and was also the sign of patentcy in the cystic duct and the ductus communic choledochus.

[1] Read before the Barry and Eaton County Medical Society at Nashville, Mich., April 30, 1896.

No other bad symptom developed in the case; highest pulse-rate was 120 (second day); highest temperature 100.2° (eleventh day). Case left hospital on the 20th day, and fistula closed on the 34th. Patient has been in excellent health ever since, has gained forty pounds in weight, has no pain, does her own housework, and, strange to say, has very little, if any, menstrual distress.

CASE II.—Mrs. J. D., aged fifty-eight, weight 120 pounds. For many years patient has been a victim of "gall-stone colic". Had passed many calculi to her knowledge. At first no jaundice was connected with the attacks, then slight and transient pigmentation, and for the past few years the coloration has been permanent, although varying somewhat in intensity. When seen by the writer her skin and conjunctivæ were of a deep saffron color. Her sufferings were intense and paroxysms very frequent. Stools were of a clay color. Obstruction to the common bile duct, probably from the impaction of a large biliary calculus was the diagnosis made.

She was kept under observation for a week prior to operation. During this time she had a typical attack, pulse 120, temperature 103.2°. Sweating and evidence of pain were very marked, paroxysm lasting about two days.

September 24, 1895. Incision made as in Case I, and search instituted for the gall-bladder. This organ could not be found, and finger was passed to the region of common duct. Here a mass, seemingly the size of an English walnut, was readily discovered near the entrance of the duct into the duodenum. An exploring needle was passed into the tumor and found to pass with some resistance, but quite readily. This indicated carcinoma, but the circumscribed and movable character of the lump sustained the diagnosis of stone. The tissues intervening between the finger and the mass were incised, and touch immediately detected the presence of a large calculus. Wound very deep and partially filled with blood, hence sight was of no avail. The calculus, after considerable manipulation was turned out, and proved to be about the size of a robin's egg. Finger reinserted into the caliber of the duct, and a row of calculi, extending upward toward the liver, discovered. They were taken away as rapidly as possible and numbered over thirty, one being about one-fourth the size of the large one.

The finger readily explored the common duct on both proximal and distal sides, the confluence of the cystic with the hepatic duct being quite noticeable, the cystic duct, however, was extremely attenuated, while the hepatic was much enlarged, being, in fact, a reservoir for stones. It was very capacious and permitted easy digital exploration. A probe was passed into the duodenum and all obstruction found removed. No attempt at deep stitching was done, as the operation had consumed over an hour's time, in consequence of the difficulties naturally connected with the procedure. A glass drain was inserted in the duct and surrounded with iodo-gauze, made to project from the abdominal incision. A counter-opening also was made in accordance with a suggestion offered and discussed by Rutherford Morison,[1] who recommends draining such cases through "a pouch (lying) between the right lobe of the liver and the gall-bladder."

External wound closed with worm-gut sutures. Pulse ranged from 120 to 140 for two days. Temperature not high. Very deficient urinary secretion for first few days, but this was overcome by application of hot stupes to region of kidneys. Pulse came down to 112. Food was retained and relished. No tympanites. Abdomen soft and relatively free from tenderness. Bile drained nicely, golden-yellow in color. Gauze packing withdrawn on the third day and the glass drain removed on the sixth. On October 2d (eighth day), the pulse and temperature began to rise, the former in twenty-four hours reaching 160, and the latter 104°. Stupor developed. No apparent trouble with the drainage. No evidence of general peritonitis. Tube through counter-opening withdrawn and contiguous territory irrigated. No change for the better occurred, and patient died October 3d (ninth day).

The autopsy showed absence of general peritonitis, but much injection and some purulent exudate in neighborhood of the Morison pouch. The biliary drain-canal was completely shut off from the peritoneal cavity. A remarkable feature of the *post-mortem* was the inability of the pathologist to find even a trace of the gall-bladder. It had undergone inflammatory change to such an extend as to result in obliteration, the dilated hepatic duct, as noted by the finger, *ante-mortem*, having acted in the capacity of a vicarious reservoir. Seven more stones of ordinary size were found in the hepatic duct. The death of this woman, after such hopeful post-operative indications, was due, in my opinion, to ptomaine intoxication, from external infection through the counter-opening.

My comments are three in number and are brief:

1. Surgery offers hope of succor to many people who hitherto have suffered without thought of relief. Cholelithiasis is a common malady, in fact, very common, many persons being possessors of stones without their knowledge. These people are walking unconsciously in the shadow of a real danger, which is liable to present itself at any time. When that danger does come, it may be met by surgical interference.

2. Action should be prompt, if the best results are to be expected. In cases like No. II., it is unwise to tarry, for while in this case death seemed to be due to causes disconnected with the question of early or late interference, who can state that the low ebb in the patient's health and strength did not contribute in a material way to the demise? That beautiful theory of Metschnikoff, phagocytosis, may have had more to do with the unfortunate outcome in this case than we know. Surely an agency which depresses general health would diminish cellular resistance to microbic invasion as well, and thus assist in the destruction of life. At any rate, deathbed operations are to be discountenanced.

2. The rational treatment of cases like the foregoing, as in any case of surgery, consists in the removal of the cause, and that as speedily and safely as possible. The use of the Murphy button was not indicated in either of these cases, for while its employment in the first case might have been followed by the passive discharge of the

[1] "On Gall-stones." *Annals of Surgery*, vol. xxii, page 181. (August, 1895).

calculi through the intestinal fistula, it can not be denied that such happy result might possibly *not* have obtained. At any rate, the taking away of these stones was better than trusting that they might be washed away, as much better, in fact, other things being equal, as activity is better than passivity. But in cases like the second, viz.: ductus communis impaction, the button could not possibly work a cure, for the stone would remain to cause more or less future trouble.

In conclusion, I would state that in my opinion the employment of the Murphy button as a remedial measure in disorders of the biliary passages, should be limited to cases of permanent, non-lithic obstruction of the ductus communis choledochus, except where both bladder and common duct are stone-laden and the danger of the double operation necessary for relief is considered greater than the liability of future difficulty after its use.

A LABORATORY STUDY.

LIQUID PEPTONOIDS.

By ALBERT R. LEEDS, Ph.D.,
of Hoboken, N. J.;
Public Analyst of New Jersey.

In The Medical News of December 21, 1895, there is an article with the above title, by Dr. A. L. Benedict.

I desire to add the following observations to those made by Dr. Benedict, and confirmed in a posteript by Dr. Leffman, in relation to the small quantities of proteids exhibited by this preparation.

In connection with the reports upon the foods of infants and invalids, which I have made to the State Dairy Commissioner during years past, I have repeatedly examined the Liquid Peptonoids and have published its composition, stating not only the presence of proteids, but their percentage amount.

Since seeing Dr. Benedict's article I have obtained original packages of the Liquid Peptonoids, and subjected it to qualitative tests as well as quantitative analysis.

Dr. Benedict's observations on the character of Liquid Peptonoids are based practically on qualitative tests, and these tests were applied directly to the samples experimented on.

Inasmuch as my previous analyses had shown that the Liquid Peptonoids is composed of a number of substances besides proteids, and these substances many times larger in quantity, might interfere with the reaction for proteids as usually applied, I adopted the following procedure: The alcohol, which makes up a fifth of the bulk of the preparation, was distilled off, and the aqueous solution remaining behind was submitted to the tests. As it was strongly acid, there was reason to suspect that the precipitation of albuminates would be prevented by their solubility in an acid solution, and this was found to be the case. But by cautious addition of the Ritthausen solution of copper sulphate, in amount sufficient to precipitate only a fraction of the albuminates present, followed by the Ritthausen solution of potash, a flocculent precipitate of albumin containing some gelatin was obtained. After filtering off this precipitate, the Biuret test was applied in the usual manner and gave the rose color characteristic of peptone. The addition of concentrated sulphuric acid developed a deep claret-red color. Mercuric chlorid, phosphomolybdic acid, and tannic acid, gave abundant white precipitates. In order to demonstrate qualitatively the presence of gelatin in the filtrate, it was concentrated by evaporation, and while still hot, solid crystalized ammonium sulphate was added to saturation and then the sulphate was just re-dissolved by boiling water. An abundant sticky precipitate of gelatin was thus thrown down and attached itself to the sides of the evaporating dish and rod used in stirring.

Quantitative analyses gave the following results:

Alcohol by weight	15.99 per cent.
" " volume	19.68 "
Albumin	0.182 per cent.
Gelatin	0.262 "
Peptone	0.377 "
Total proteids	0.821 per cent.
Maltose	4.735 per cent.
Sucrose and lactose	5.16 "
Total carbohydrates	9.895 per cent.
Hydrochloric acid	0.034 "
Ash	0.205 "
Total solids	10.921

So it appears plainly that the reasons for the negative results of Dr. Benedict's tests for proteids was due to the very dilute solution of the proteids in association with the other bodies, the proteids actually forming less than one-tenth of the whole solid content.

Liquid Peptonoids is stated to contain the albuminoid principles of beef, milk, and wheat, entirely digested and ready for assimilation. So, in the light of this statement and of the name itself, it is not unreasonable to expect such Liquid Peptonoid to contain a preponderance of albuminoids in its constituents. Ordinary market milk contains, on an average, 3.75 per cent. of albuminoids, of which 0.75 per cent. is non-coagulable albumin and peptone. Should not a preparation of predigested milk contain considerably more than 0.75 per cent. of albumin and peptone? Here we have a preparation of predigested *beef*, *milk*, and *glutin*, with only 0.821 per cent. of proteid matter.

In the analyses previously published[1] I found over two per cent. of proteids, and other published analyses, one, I think, by Dr. Chittenden, stated two and a half per cent.

It is evident, therefore, that the present preparation is far below the standard of the original, containing only about one-third of its original proportion of albuminoids.

In the State Report, the objection was made to this preparation that it contained too small a percentage of albuminoids to justify the claims that were made in its behalf. The present composition, as disclosed by this analysis, only the more strongly sustains this criticism.

I believe that peptone has a peculiar value in nutrition; may be of incalculable value as compared to food in its ordinary form, and so, even in small quantities, of the greatest benefit to the sick. But however high the factor of peptone may be as a nutrient, a preparation advertised

[1] See Report N. J. Dairy Commissioner for 1887.

to "contain the albuminoids of beef, milk, and glutin, in an entirely digested form," is seriously deceptive in its character when it contains but 0.821 per cent. of total proteids of all kinds, and is far below a reasonable and easily attainable standard.

I have been severely criticised, and frequently threatened with legal prosecution and large punitive damages, for publishing analyses of some infant and invalid foods, and for saying what appears to me to be the truth concerning these foods; but I am of the opinion, nevertheless, that these manufactured foods should be the concern of the various boards of health, with as great benefit to the public, no doubt, as in the regulation of the production and sale of beef, milk, etc.

MEDICAL PROGRESS.

Recovery from Focal Epilepsy Following Removal of Subdural Sarcoma.—Czerny (*Münchener medicinische Wochenschrift*, 1896, No. 11, p. 241) has reported the case of a stonemason, forty-one years old, who at the age of thirteen years was rendered unconscious by a blow upon the occiput with a stone. At the age of thirty-four years, severe headaches set in, followed soon by twitching at first in the left leg, and subsequently involving gradually the remainder of the left side. For a time the attacks were controlled by bromids, but subsequently they recurred with increased severity and involving also the left upper extremity and left side of the face. In addition to these minor attacks, the man had major ones, lasting for twenty minutes, in which consciousness was lost. Operation was at this time proposed, but not assented to. Upon coming under observation some eight months later, examination disclosed two fingers' breadth to the right of the median line, and a finger's breadth above the transverse sinus a non-adherent cicatrix of the scalp. There was no optic neuritis. Sensibility and motility were practically alike on both sides; there was, however, slight impairment of the muscular sense on the left. There was a sense of restlessness and a feeling of fear and formication upon the left side. The memory was impaired. While under observation, a severe convulsion occurred, beginning in the left leg, progressively extending to the left arm and the left side of the face, followed by general twitching of the whole body, tonic spasms and loss of consciousness for a quarter of an hour, followed by mental confusion. A diagnosis of cortical tumor of the brain was made and operation undertaken. A tongue-shape flap with its base toward the ear and its apex toward the median line was turned back from the right parietal bone in a situation corresponding to the upper extremity of the Rolandic fissure. The dura, which was dense and scarcely pulsated, was incised and a flap turned back. Corresponding to the upper extremity of the ascending parietal convolution, was a bluish-red, circumscribed, nodular tumor measuring 1¾ x 1½ x 1⅓ inches attached to the inner surface of the dura and to the falx. Anteriorly, extending forward to the ascending frontal convolution, was a cyst as large as a hazelnut filled with serum. The tumor was only slightly attached to the brain, posteriorly, and was easily dissected away, with little hemorrhage. Following the operation, tonic spasm and twitching appeared in the extremities of the left side, and for a time the patient was extremely irritable; but in the course of a month the wound had almost healed and the patient was able to get out of bed. A slight suppurating fistule remained for a time. Six or seven weeks after the operation, a further convulsion occurred, which was not repeated, however, after the evacuation from the wound of a small accumulation of pus. Upon histologic examination, the tumor proved to be a spindle-cell sarcoma arising from the dura.

Paroxysmal Laughing Spasm.—At a recent meeting of the Psychiatric and Neurological Society of Vienna, Infeld (*Wiener klinische Wochenschrift*, 1896, No. 10, p. 179) presented a man, thirty years old, who for three years had been having attacks of laughing spasm. These occurred at first at intervals of two or three months, gradually increasing in frequency to sixteen in the day. Some diminution followed treatment with bromid, which, however, was suspended as the attacks again increased in frequency, and the patient's memory began to suffer. The attacks occurred especially between nine in the evening and half-past six in the morning, and in greatest frequency between five and half-past six. Some occurred also during the day, however the patient happened to be occupied. In the intervals between the attacks, and immediately before and afterward, the man was perfectly well. The attacks set in with a sense of formication arising from the toes of the left foot, and the patient would fall to the ground unless he could reach some place to lie down. When this feeling reached the level of the left nipple the patient lost consciousness briefly, for two seconds, he estimated. Then followed tonic spasm, beginning in the lower extremities with strong dorsal flexion of the foot and toes, and successively extension at the knee, slight flexion of the thigh, at times deflection of the head to the right, slight adduction and abduction of the arms, flexion and pronation and supination of the forearm and the hand, flexion at the wrist, and extension of the fingers. The spasm was less pronounced on the right than in the left. Often the patient lay upon his face. The mouth and eyes were closed spasmodically, the eyeballs turned upward; the pupils were dilated and unresponsive to light. At the height of the attack the patient at first smiled, and then laughed aloud without other sign of merriment. The entire attack occupied about two minutes. On two occasions there was protracted loss of consciousness. The patient had suffered numerous injuries from falls, and his tongue presented several scars. Sometimes the sensory phenomena appeared without the motor, and several times it was possible to abort the attack by construction of the left arm with a ligature. Improvement followed the administration of potassium bromid, in doses gradually increased from 90 to 225 grains daily. At the age of fifteen years the patient had suffered injury of several fingers, of the right thigh, and of the right side of the face. He had for a year or more, several years before his attacks began, indulged in alcohol to excess, and had been much depressed by the death of his father. On one occasion he had tem-

porary loss of use of the right leg. The case was believed to be one of minor epilepsy.

Carcinoma of the Rectum in a Youth of Thirteen Years.—Czerny (*Münchener medicinische Wochenschrift*, 1896, No. 11, p. 241) has reported the case of youth, thirteen years old, who presented in the rectum, just below the promontory of the sacrum, a tongue-shaped tumor, attached posteriorly, and ulcerated upon its inner surface. A small piece removed presented the arrangement of a cylinder-cell proliferation, and on account of the age of the patient a tentative diagnosis of papillary adenoma was made. Radical operation was, however, advised. The tumor had been in process of development for six months. The rectum was resected for a distance of 2½ inches in conjunction with osteoplastic division of the fourth sacral vertebra. The carcinomatous ulceration involved the rectum for a distance of an inch and a half, and extended through the muscular into the serous coat. All of the involved structures were removed, but the circular suture of the intestine failed to hold securely, so that a small fecal fistula resulted.

Percussion of the Heart with the Body Bent Forward.—From a clinical study Gumprecht (*Deutsches Archiv für klinische Medicin*, B. lvi, H. 5, 6, p. 491) has found that the absolute cardiac dulness is increased in extent, intensity, and resistance, by inclining the body forward during the act of percussion. While this dulness often disappears in the dorsal decubitus as a result of pulmonary emphysema or gastro-intestinal tympanites, it is demonstrable when the body is inclined forward. With the aid of this procedure otherwise unrecognizable hypertrophies of the heart are rendered diagnosticable, and especially the left-sided hypertrophies of age masked by pulmonary emphysema—such as those associated with arterio-sclerosis or contracted kidney—and less commonly right-sided hypertrophies.

THERAPEUTIC NOTES.

In the Treatment of Membranous Dysmenorrhea.—Lyonais (*Médecine Moderne*, 1896, No. 25, p. 198) recommends the following plan of procedure: For the pain of the paroxysm the usual sedatives may be employed; of especial use are cannabis indica, sodium salicylate in doses of from 15 to 120 grains in twenty-four hours, enemata of camphor and opium, of chloral, suppositories of opium, antipyrin, etc. No remedy, however, equals the hypodermic injection of morphin hydrochlorate given in doses of ⅙ or ⅓ grain night and morning until the membrane is expelled. For two or three days preceding the menstrual period vaginal injections of hot water (118.4° F.) may be practised. In the intervals between menstruation, if the cervical canal is constricted the incision of Sims may be made, or dilatation attempted with bougies or laminaria tents. The uterine mucous membrane may require curetting or cauterization. Displacements of the uterus, fibroid and other tumors, will require appropriate treatment. If the adnexa be diseased their removal may be seriously considered. Sometimes the pain disappears spontaneously or as a result of conception when due to arrest of development of the uterus. Under these conditions benefit may result from hot foot-baths, vaginal injections at a temperature of 114.4° F. and emmenagogues. When a diathetic state coexists iodin in alcoholic solution with tannic acid, or with potassium iodid may be employed together with cod-liver oil, arsenic, alkalies, etc., especially in cases presenting lymphatism, scrofula, defects in development. In some cases hydrotherapy and electrotherapy prove serviceable.

The Antiseptic Action of Subnitrate of Bismuth.—The *British Medical Journal*, April 4th, quotes Carles in the *Archives Cliniques de Bordeaux*, February, as opposing the theory that subnitrate of bismuth has a merely mechanical action. Gayon and others have proved that it has a powerful bactericidal action, and the author found that an easily decomposable solution containing subnitrate of bismuth keeps indefinitely. Gosselin and Heret have found it useful for cleansing putrid wounds. To understand its action when given internally one must remember that the purest specimen tends to split up into bismuth oxid and nitric acid when in contact with water. (1) Action on the stomach. The oxid, which is in excess of the acid, acts first as a detergent to the gastric mucous membrane and precipitates the mucus, and, secondly, by its special germicidal power. The nitric acid has a tonic astringent and also a special antiseptic action (Duclaux). (2) In the intestine it meets with sulphureted hydrogen gas, which converts it into black sulphid, thus liberating a further portion of its acid, which is again partially transformed into nitrous vapors, the antiseptic action of which has been proved by Girard and Pabst. For these reactions to take place it is necessary (1) that the subnitrate should be pure and not mixed with carbonate; (2) that it should be as finely powdered as possible. This latter point is easily proved in the laboratory. Thus it is not necessary to give up this old remedy for the newer, the salicylate, which costs twice as much.

The Treatment of Diffuse Bronchitis in Infants by Means of Warm Baths.—At a recent meeting of the Académie de Médecine Renant, (*Médecine Moderne*, 1896, No. 25, p. 198) recommended in the treatment in diffuse bronchitis in children systematic bathing, every three hours, in water at a temperature of 100.4° F. for seven or eight minutes, if the bodily temperature reaches 102.2° F. or more. As a result, as observed in more than a hundred cases, the fever soon declines and the bronchitis yields. Quinin sulphate or hydrobromate was employed in tonic doses as an adjuvant. In cases of capillary bronchitis, in which the temperature rises high (104 –105.8° F.), the temperature of the bath may be reduced to 95° or 96.8° F.

For the Pain of Gastric Ulceration.—

℞	Exalgin		45 grains.
	Extract of belladonna, Codein, phosphate.	aa	5 grains.
	Sugar of Milk . . .		75 grains.

Mix and divide into ten cachets.

Dose, one to be taken with the onset of pain.

Boas.—*Semaine Méd.*, No. 18.

The Medical News.

A WEEKLY JOURNAL

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SATURDAY, MAY 30, 1896.

THE BROOKLYN JENNERIAN CENTENNIAL.

The celebration at Brooklyn on the 14th inst. was a "red letter" evening. The two distinguished invited medical guests, Drs. Pepper and Welch, did not fail of their promise to attend, and made addresses worthy of their standing and of the occasion. Dr. Pepper especially, was masterly in his presentation of the case in favor of vaccination, and, in part, said: "Too much attention cannot be paid by us to the worth of Jenner. Very few of us have the desirable amount of knowledge concerning Jenner's life as a man and an original investigator, and his immortal discovery. To him is due that extreme and rare credit of having devised the incalculably valuable scheme of close and patient observation, without which great discoveries in the realm of science are a hopeless dream.

"Jenner's discovery has removed a scourge from the face of the earth. But think how many others still await solution at our hands! Their solution depends upon the methods he put into such successful operation. I have taken the trouble to secure a few statistics of preventable deaths in Philadelphia for the past twenty years. The result is startling. There were 55,000 deaths in that city alone in that time from tuberculosis, 11,500 from typhoid fever, 8000 from scarlet fever, and 155,000 from various infantile causes, all of which must be included in the list of preventive diseases. If we should personally practise preventive medicine, I am certain our services would be vastly greater to suffering humanity than ever before. It is a higher medicine than that which seeks to quell contagious disease after it has spread over our cities and eaten into the vitals of the people. This is a very serious matter and needs deep thought. We ought to get it planted in our schools and public libraries.

"Municipal and national preventive medicine is also our great need. How much do municipalities appreciate this? How many laboratories do our cities endow? I tell you, that to-day the medical profession is the only profession which is trying forever to restrict its own field of effort and emolument. Yet, when it tries to secure government or city cooperation, it is set upon as if it were trying only to secure personal gain. We should unite in insisting upon the immense importance of these subjects—health, the prevention of disease, and epidemic. Here, in this aggregation of population, soon destined to be the second greatest city in the world, is a magnificent opportunity. Let it lead in showing the world its zeal for the succor of humanity. This is, moreover, a national question. Cities cannot deal largely enough with questions of quarantine, the pollution of the sources of water, the pollution of our coast waters and the poisoning thereby of our sea food product. Then there are the great domestic food crops and our food animals. I do not want more centralization in Washington, but modern preventive medicine demands national control. We must speak strongly for humanity and demand recognition for these things. Remember that our duty is to force this question into immediate public recognition."

Dr. Welch chose for his subject the scientific bearings of Jenner's discovery, and its logical consequences in the development of preventive medicine. He characterized the discoverer of vaccine as a thoroughly trained scientific man. "He knew pathology, and knew it well. His inves-

tigations were entirely of a scientific character, and no man in medicine has been less selfish in his his work. Jenner was the first physician to make a *post-mortem* examination in the case of angina pectoris, and the discovery of its nature was really due to him. His careful investigation convinced him of the accuracy of his opinion that it was merely an ossification of the coronary arteries. That little monograph of Jenner's on vaccination is one of the classics of the language. It takes rank with Harvey's essay on the heart. It illustrates perfectly his far-reaching, painstaking observation, and his careful study of every aspect of this subject. Dr. Pasteur, whose great discoveries in our own time have electrified the medical world, gives full credit to Jenner as the source of his inspiration. The theory of preventive medicine is to-day a principle as likely to be as beneficent to humanity as that discovered by Jenner. All of our great discoveries rest on the application of experimental method in medicine. They rest on experimentation on animals; vivisection, if you like it. But it is a necessity. There has never been a time in which great discoveries in medical science have been possible, except through the agency of experimentation. Your society has shown an enlightened spirit in recognizing this opportunity to honor the memory of Jenner, and I thank you for the privilege that you have extended to me to participate in doing honor to his memory."

The memorial medal, given to each guest, is of bronze, and fitly commemorates the occasion. The menu of the banquet quotes Scriptural text as applicable to the great sanitary pioneer: "He stood between the living and the dead, and the plague was stayed."

TUBERCULOSIS OF THE KIDNEY.

There is increasing evidence that tuberculosis of the kidney, both primary and secondary, is commoner than the frequency of its recognition heretofore would lead one to believe. The importance of early detection, particularly if the lesson is primary or localized, must be obvious, as a number of recent observations have demonstrated the possibility of perfect recovery as a result of radical surgical intervention. The diagnosis depends essentially upon the detection of tubercle-bacilli in the urine, obtained, if possible, directly from the ureter of the diseased organ. The early symptoms may fail entirely to attract attention. As the case progresses these are likely to assume the characters of those due to inflammatory lesions involving the part affected. The most conspicuous manifestations ordinarily are pain in the loins, often paroxysmal in character, and much like that of renal colic, together with the passage with the urine of blood and the *debris* of disintegrated tissue. Ultimately, constitutional symptoms appear, perhaps with evidences of extension, and often late in the progress of the case a swelling in the loin may be detected on palpation. When the affection, especially if primary or localized, can be recognized the remedy lies in resort to surgical measures, and in accordance with the conditions present these will consist principally in nephrectomy or nephrotomy. In a recent communication emanating from the Pepper Laboratory of Clinical Medicine, Hamill[1] considers this subject in its various clinical aspects and reports fifty-five cases that he has collected from the literature. Operation was performed in seventeen of this number, with the following results:

	Cases	Improvement	Recovery	Death
Nephrotomy...	4	1	2	1
Nephrectomy..	9	1	5	3
Nephrotomy followed by nephrectomy...	4	1	2	1

These results must be viewed as in the highest degree assuring and should stimulate the clinician to an early diagnosis.

An additional case illustrating the success attending early recognition and radical treatment of tuberculosis of the kidney has recently been reported by Casper (Berliner klinische Wochenschrift, 1896, No. 17, p. 369). The patient was a woman, forty-two years old, without hereditary predisposition, who for six months had complained of symptoms of vesical catarrh, to which became added pains in the right loin, together with a sense of abdominal tension. Varied local treatment proved unsuccessful. The urine was

[1] "Primary Tuberculosis of the Kidney, with Especial Reference to Its Manifestations in Infants and Children," p. 35. Philadelphia, 1896.

slightly turbid and of acid reaction with a specific gravity of 1018. It contained numerous pus-corpuscles and ciliated epithelium, but neither blood-corpuscles nor tube-casts. A small quantity of albumin also was present. In the centrifugated sediment tubercle-bacilli were found. Upon cystoscopic examination the interior of the bladder appeared normal except in the situation of the right ureter, whose opening could not be seen. In its usual site was a diffusely reddened elevated area in which blood-vessels could not be recognized. The urine from the left ureter appeared clear and normal, while none could be seen to issue from the place where the right ought to have been, although from time to time a few drops collected in this situation. The left ureter was readily catheterized with the aid of the ureter-ocystoscope and the urine obtained proved to be normal. After a number of unsuccessful attempts to enter the right ureter the catheter disappeared beneath the mucous membrane of the bladder and was readily pushed further onward. The urine thus obtained resembled that found in the bladder, being turbid, purulent, and albuminous. Upon the first examination tubercle-bacilli could not be found, but at a subsequent examination their presence was conclusively demonstrated. A diagnosis was therefore made of tuberculosis of the right kidney, with circumscribed involvement of the bladder. Accordingly nephrectomy was performed, with the recovery of the patient. The removed kidney presented tubercles upon its surface and two caseous nodules in its parenchyma.

THE INCREASING LACK OF ESPRIT DE CORPS IN THE MEDICAL PROFESSION.

It must be apparent to any thoughtful mind that the medical profession is fast drifting away from its ancient ethical standards. In some respects this is well, for those standards were instituted when the conditions of social life were far different from those which now obtain. Because of the supposed greater intellectual attainments which belonged to a certain decorum and dignity formerly inhered in them all the so-called learned professions when compared with the trades and handicrafts. Such a system fostered shams, it is true, and placed many men before the community at more than their real value. The medical profession was not peculiar in this respect, for quacks and sharpers and hypocrites were to be found in the other learned professions also. Furthermore, the rigid ideas of the earlier days helped to keep within conventional lines some who might otherwise have gone astray, and these ideas were not regarded as burdensome by those who had no disposition to wander.

When the general average of intelligence was advanced, when greater tolerance for differences of opinion prevailed, and when the law of the commonwealth established one standard of requirement for all who engaged in the practice of medicine, allowing latitude of opinion in matters non-essential, the era of greater liberty of action was ushered in. We do not as yet fully realize the advantages of such a situation. With the era of greater liberty has come a distinct lowering of ethical standards in the reciprocal relations which physicians hold to each other, a tendency to regard the art medical as not much more than a trade, a means of obtaining a livelihood, a means of making money. If the art medical is all of these, which is quite true within certain limits and with certain individuals, it is also much more than these. It is indeed the means by which physcians gain their livelihood, support their families, and make provision, in the rare instances in which it is possible, for old age; but it is no better than the dirtiest and most slavish kind of a trade, if instead of developing character and making one broad and humane, it debases one into a mere money-getter, a sordid, avaricious seeker for selfish advancement with no generous thoughts or impulses for others who are working in the same field. It is deplorable that there are physicians in this city, not to mention a like possibility in other communities, who, if reports are to be believed, not only expect but demand fees for services rendered to fellow-physicians or those who are immediately dependent upon them. A sense of gratitude and propriety should certainly inspire those who are able to make compensation for conspicuous services rendered. Only a small-souled or an excusably impecunious man would be unmindful of such an obligation, but even then the requital should come only as an expression of gratitude, never as a fee which was required.

It is time that the profession showed greater solidarity in these matters. It is time that the mere money-getters be allowed to be isolated from those who believe that the cultivation of fellow-feeling, broad charity, and generous impulses within the profession should not be allowed to degenerate into a lost art.

ECHOES AND NEWS.

The principal Medical Libraries of New York City consist of the N. Y. Hospital Library, 25,000 volumes, the Library of the Academy of Medicine, 45,000 volumes, and 15,000 volumes devoted to medicine in the Mercantile Library.

The Faculty of the New York Polyclinic Medical School and Hospital has appointed Dr. W. W. Van Valzah Professor of General Medicine and Diseases of the Digestive System and the Blood. Dr. J. Douglas Nisbet has been appointed Adjunct Professor to the same chair.

In 1888, W. E. Smith invented the drop-frame bicycle and built one for his wife. Mrs. Smith's first wheel weighed sixty pounds. She herself tipped the scales at eighty. Since then she has gained forty pounds, and her wheel has lost exactly the same amount—which says a great deal for the evolution of both women and bicycles.

One hundred years ago, May 14, 1796, Dr. Jenner first performed the operation of vaccination in England. The civilized world recognizes this as the greatest discovery in preventive medicine of all time. And yet in England to-day there is raging at Gloucester a most virulent epidemic of smallpox. What a commentary it is that the perverse folly of a small but noisy band of faddists has been able to bring such a scourge upon a large and prosperous community.

The Milwaukee contention over vaccination in the public schools has happily been placated. The suit of John Schierl against the School Board has been withdrawn from the Supreme Court; no costs to either side. The School Board will be free hereafter to enforce the rule requiring that every pupil shall give evidence of a successful vaccination before admission to the public school.

The Medical Society of Westchester County, N. Y., celebrated its one-hundredth annual meeting on the 20th instant.

It is estimated that from eight to twelve millions of dollars will be saved the United States Treasury annually by repealing the measure relating to free alcohol for the arts and sciences.

Professor Lombroso has expressed his belief that Dante was insane, and that the visions depicted in his "Inferno" are those from a disordered brain and should not be considered emanations of genius.

The serious illness of Sir J. Russell Reynolds of London, is almost as deeply regretted by the medical profession in America as in England. It will be learned with pleasure by his many admirers here that his symptoms are more favorable and hope is now entertained of his early recovery.

It is stated that the prime cause of the recent fatal illness of Archduke Karl Ludwig of Austria, brother of the emperor, was found in the water of the river Jordan, which he drank as a matter of religious devotion.

The profession is gradually purging itself of quacks and mountebanks. An Italian, Cacciola by name, has been arrested for practising medicine in Brooklyn without a diploma or certificate of registration, and the Pennsylvania State Medical Society has succeeded in convicting a notorious female quack in Pittsburg on a similar charge.

The British Association for the Advancement of Science will hold its meetings this year at Toronto, Can., commencing August 18th. The last meeting in Canada was in 1884, at Montreal.

It is rumored that the British army authorities are about to make a number of concessions to the members of the medical staff. The English medical journals are inclined to look with suspicion upon these promises, and point to an established disposition on the part of these authorities to forget them as soon as the ranks are well filled from the applicants they have attracted.

Dr. Charles F. Chandler, Professor of Chemistry in the Columbia School of Mines, New York, has completely recovered from an attack of appendicitis, which prostrated him six weeks ago. The attack came without warning. He arose in his usual health, but before noon was seized with severe pains, which were diagnosed at a consultation of physicians a few hours later as those of appendicitis. The next morning the diseased appendix was removed. Apparently at no time after the operation was he in danger, while the operation seemed necessary to save his life.

A dispatch from Cairo, Egypt, says that a cholera miasm, similar to that of 1883, overhangs the city. It is accompanied by a heavy, hot atmosphere. The virulent form of the disease has hardly ever been paralleled at such an early stage. The deaths are about ninety per cent. of the seizures.

Moritz Pront, the nineteen-year-old boy who has been in a cataleptic trance since April 27th, remains in his strange condition at the Beth Israel Hospital in East Broadway, New York City. The starvation treatment, so-called, has been stopped, and the boy is being fed again artificially at regular intervals. He is apparently very feeble but the prognosis is favorable.

On May 22d a memorial meeting under the auspices of the Montgomery County Medical Society was held in the Court House at Norristown, Pa., as an expression of respect for the late Dr. Hiram Corson. Speakers were present from Philadelphia, and much feeling was displayed in honoring the memory of one whose worthy life had endeared him to the noblest of his fellow-men.

Drs. Henry W. Cattell and Thomas J. Morton have been appointed coroner's physicians for Philadelphia to succeed Dr. William K. Mattern, deceased, and Dr. H. L. Sidebotham, resigned.

It has been determined by a Russian bacteriologist that coffee is, to a limited degree, a disinfectant. This quality is not dependent upon the active principle of the bean, but develops in some manner during the process of roasting. Watery infusions of the roasted coffee prove fatal to the cholera bacillus in a few hours, and after a longer time the typhoid fever germ also succumbs. This germicidal effect is much too slow to render this discovery of any real therapeutic value.

A very timely warning is given in *Médecine Moderne* regarding the popular use of extracts of Kola. This article is entitled "The Kola Delusion," and in its discussion the fact is pointed out that increased capacity for work obtained through its employment is temporary and unreliable, like that gained from alcohol and cocain. In truth, the effect produced by every member of this group of drugs, which the author very aptly calls "nerve-foolers," in that they abolish the natural sense of weariness and fatigue, is due probably to an obtunding effect upon the nerve centers. That caffein is closely allied to creatin and other tissue poisons which invariably give rise to a loss of energy when they have accumulated in the body, is a further suggestive observation.

The Sisters of Mercy have nearly completed their retreat for consumptives in the Adirondacks. It is located upon a large tract of land presented to them by Dr. W. Seward Webb and Mr. Paul Smith, and is the choice site in the immense estates of these gentlemen. "Sunrise Mount," as it has been named, is two thousand feet above the sea, and surrounded by miles of pine forests and scenery unsurpassed. The cottage system is adopted. A most important advantage possessed by this sanitarium is accessibility. It may be reached without change of cars from most of the Eastern cities.

The St. Louis Board of Health made public the results of a trial of antitoxin in 326 cases of diphtheria. Of this number, only 15 cases died, showing a percentage of mortality of 4.6. Both the city of St. Louis and the promoters of antitoxin therapy are to be congratulated upon these excellent results.

Promising indications of establishing a hospital in the southern part of Brooklyn are found in recent meetings held by the influential citizens of that district. The larger hospitals of Brooklyn are much too remote to render prompt assistance to the poor of this populous region.

The Pennsylvania Board of Health has been clothed with power the exercise of which does not meet the approval of certain of the Philadelphia clergy. An act passed June 18, 1895, made it obligatory, under penalty of the usual fine, upon those in charge of all public, private, parochial, Sunday, or other schools to cause the children in attendance to present certificates of vaccination and to exclude and report such as were unable to furnish the same. The application of this and other sanitary requirements to Sunday schools is thought by those in charge to be unnecessarily burdensome.

The Pennsylvania State Medical Society held its forty-sixth annual meeting at Harrisburg, last week. The session was well attended, and its interesting program scientifically and harmoniously carried out. Dr. E. E. Montgomery of Philadelphia was elected president for the ensuing year. The next meeting will be held in Pittsburg in September, 1897.

Carl Pennington Frost, M.D., LL.D., Dean of the Dartmouth Medical College and Professor of the Science and Practice of Medicine, died May 24th, at Hanover, N. H., of heart disease. He caught a bad cold last spring, and has not been able to be out except for short drives since then. He received the degree of A.B. from Dartmouth in 1852, A.M. in 1855, graduated from Dartmouth Medical College in 1857, and received the degree of M.D. from New York Medical College in 1859. Dr. Frost leaves a wife and two sons, graduates of Dartmouth, class of 1886, the older, G. D. Frost, M.D., Professor of Anatomy in Dartmouth Medical College, and the younger, E. B. Frost, Assistant Professor of Astronomy in Dartmouth College.

CORRESPONDENCE.

SEASICKNESS—A REPLY TO DR. ROCKWELL'S ARTICLE IN THE "MEDICAL RECORD" OF JANUAY 25, 1896.

To the Editor of The Medical News:

Dear Sir: In reply to Dr. Rockwell's very efficient paper on the preventative treatment of "mal de mer," I would like to say a few words in defense of the ship's surgeon and give a few opinions as regards this most distressing malady.

The ship's surgeon labors under great disadvantages as regards his opportunities to allay the suffering of seasick passengers. In the first place, he never sees any of the passengers until an hour or so before sailing, and then he has but little opportunity to give any preventive whatsoever. Another difficulty is that many of the susceptible passengers become nauseated immediately they come on board, and cannot retain anything on the stomachs. Here is where hypodermatic medication comes in very opportunely. An injection of one-quarter grain of morphia, combined with 1–100 of atropin, scarcely ever fails to relieve the patient after one repetition. The nausea is allayed almost immediately. I have tried it, not only in seasickness, but in the nausea caused by railway travel, and have every reason to believe that, if used in time, it will always prove to be efficient.

Seasickness is undoubtedly due to a disturbance of the central nervous system, caused by a partial paralysis of the vasomotor nerves. This paralysis causes a passive congestion of the brain, owing to the relaxed blood-paths, and produces the distressing dizziness, headache, and vomiting. To prove that the nausea is due to nervous irritation, the patient vomits with a clean tongue, unless

there is constipation present, when there may be a slight coating. What causes the primary nervous disturbance, we are unable to say. Whether it due to the odor of the ship, the sight of the heaving water, or to the rolling of the vessel, we are at a loss to know. I have seen persons seasick before we had left "yellow water" and before there was any swell at all. I have found that those who are of a so-called bilious temperament are much more liable to seasickness than persons who are of an opposite temperament.

I had tried the bromids before reading Dr. Rockwell's paper, several times, and found that they produced the desired effect. Chloral will also prove to be a good prophylactic. Patients for whom I have prescribed the above drugs have told me that they were not troubled in the least during the voyage by seasickness. Given in fifteen-grain doses, three times a day, for two or three days before sailing, will be found enough to produce the desired effect.

Knowing that there is a relaxed condition of the blood-paths and a nervous excitability, it stands to reason that the use of morphia for the nervousness and of atropia for a vasomotor stimulant are the proper therapeutic indications.

In closing, I would remark that, aside from seasickness, there is another condition to be combated by the ship's surgeon, which always occurs with "mal de mer," viz., obstinate constipation. Whether this is due to the inactivity among persons on shipboard or the seasickness, I cannot say. I know that it is sometimes a very difficult matter to make any ordinary purge given in usual doses to act, and very large doses have to be given. I have found the cascara sagrada, given in ℥ss doses, disguised by syrup of orange, at night, the most agreeable and efficient purge.

Charles S. Bowman, Surgeon.

On Board S.S. Illinois, Antwerp, Belgium.
April 1, 1896.

COLLECTIVE INVESTIGATION IN PNEUMONIA.

To the Editor of The Medical News:

Dear Sir: My two collective reports, already published, on "Ice-cold Applications in Acute Pneumonia," give a record of 195 cases so treated, with 7 deaths, or a mortality rate of 3.58 per cent.

Being desirous of making as full a report as possible on this subject, I take the liberty of asking those members of the medical profession who have tested this measure to kindly give me the result of their experience. Full credit will be given to each correspondent in the report which I hope to publish. Blanks for the report of cases will be furnished by me on application.

Thomas J. Mays, M.D.

1839 Spruce street, Philadelphia.
May 1, 1896.

NEW METHOD OF ADMINISTERING CALOMEL.

To the Editor of The Medical News:

Dear Sir: I have occasionally wished to administer a vigorous cathartic to one suffering with mania or other mental disease, when the medicine could not be given by mouth without a struggle. A simple and effective expedient in such cases is to blow calomel into the nostril through a tube or roll of paper. The patient may be blindfolded, or, better, led to shut the eyes tightly, to escape having the application made directly to them, for such deception is certainly justifiable in some cases. The drug is nicely distributed over the nasal tract, finds its way into the intestinal tract, and operates as if given by mouth. It is not painful nor disagreeable, as I have demonstrated by personal trial.

Because I have never seen this little expedient mentioned, I send you this note, for it is of great value in certain cases.

Yours very truly,

J. N. Hall, M.D.

Denver, Col.,
April 30, 1896.

EXPANSION AND CONTRACTION METHOD OF FILTRATION.

To the Editor of The Medical News:

Dear Sir: In a reprint from the *Boston Medical and Surgical Journal*, recently sent to me, dated April 25, 1895, I find that Dr. Louis F. Bishop of New York first applied the test-tube in the expansion and contraction method of filtration as given in his paper: "A Quick Method for the Filtration of a Small Quantity of Urine," which I considered original with me, as published in your issue of March 21, 1896.

A comparative study of the papers indicates that the fundamental principles of the theory are the same in both, yet in practical application mine is a simplification of his method. Yours truly,

Samuel H. Friend, M.D.

Milwaukee, Wis.,
May 8, 1896.

COLORED MEDICAL DOCTORS AS ATTENDANTS IN INSANE ASYLUMS.

To the Editor of The Medical News:

Dear Doctor: In the April 4th number of the Medical News in the "Echoes and News" column, page 387, there appears this statement: "Governor Bradley of Kentucky, has appointed Dr. B. F. Porter (colored), third assistant physician to the Lakeland Asylum. As he will have several wards containing white patients under his medical supervision, the governor has been receiving rather unpleasant criticisms throughout the State." I have seen no such criticism in the press of this State, although you doubtless have. I beg to call your attention to the fact, that the statement whatever its source, is absolutely untrue, and ask that you will kindly correct the error. Dr. Porter, an intelligent and reputable colored doctor, is the third assistant physician in this asylum, appointed by Governor Bradley. He was appointed to take charge of the colored patients, of whom there are over two hundred in this institution. He has never had charge of a white ward or white patient since he has been on service. His work and duties are exclusively with the colored patients, are entirely satisfactory, and his presence has not produced the slightest friction in the management and con-

duct of the affairs of this institution. I think it has come to be regarded as not an improper appointment, and really now is looked upon as a very correct and suitable arrangement to have a colored doctor to look after the interests of the colored patients, which he does with great zeal.

Very respectfully,

H. F. McNARY, Superintendent.

LAKELAND, KY., May 19, 1896.

[THE MEDICAL NEWS is gratified to know that the original statement is incorrect, and to give its unqualified approval to the arrangement as stated by Dr. McNary. —ED.]

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE. SECTION ON GENERAL MEDICINE.

Stated Meeting, April 21, 1896.

REYNOLD W. WILCOX, M.D., Chairman.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

DR. IRWIN HOWELL HANCE read a paper on this subject. He said that prominent among the many drugs recommended for the treatment of this disease stood creosote. According to his experience, the most convenient and most efficacious method of administering this drug was by filling capsules with bismuth, and putting a few drops of creosote on the bismuth. By this method the dose could be readily adjusted to the every varying requirements of the patient, and one was always sure of administering the creosote in an active form. Ready-made capsules containing creosote were not reliable. Guaiacol had proved quite useful in the treatment of phthisis in doses of from five to fifteen minims. When given endermically, it sometimes caused dangerous depression of the temperature, with profuse perspiration. The writer said that he had used it hypodermically, and had seen very fair results as regards controlling the temperature. Guaiacol would probably never take the place of creosote. It was best given hypodermically in thirty-three per cent. solution of sterilized sweet almond oil. Hydrotherapeutics had been recommended by several observers—in this country, chiefly by Baruch. The most useful form of it for phthisical patients was the rain-bath, given at an average temperature of 65° F. The tuberculin treatment is still used by a few; (1) as a test for tuberculosis in the early stages; and (2) cautiously administered in small and gradually increasing doses until the disease process has been arrested. The writer believed that it could be safely used for diagnostic purposes, and he had used it in this way with satisfaction. He believed also that the patients who had been cured by the climatic treatment, together with the use of tuberculin, had greater power of resistance against subsequent infection than those treated by the climatic method alone. As to the climatic treatment, the author said the locality should be two thousand feet or over above the sea, with a sunny exposure, with comparatively slight variations in temperature, and where the air is free from such contamination as arises from a near-by city or town.

The reader of the paper divided phthisical patients into two classes; (1) the febrile, and (2) the non-febrile. The former, he said, required to be treated out-doors until the temperature remained practically normal for a number of weeks continuously.

These patients should be given constant exercise, but they should never be allowed to exercise to the point of fatigue. This treatment should be aided by good nourishment and the internal use of creosote and cod-liver oil unless the stomach rebelled. He insisted that the too common practice of deceiving phthisical patients always bore bitter fruit; it was much better to tell them the truth and advise them promptly regarding what was best to be done. If the patient had had hemorrhages, there was danger of recurrent hemorrhages, with the consequent exhaustion.

DR. BEVERLY ROBINSON said that while he was one of the first to call attention to the creosote treatment, he wished to disclaim any idea of originality in this connection. More than this, he believed that Bouchard had done more than any other one in establishing the creosote treatment for phthisis on a firm basis. Bouchard laid great stress on one fact of great importance, *i.e.*, that the creosote must be administered in an alcolholic solution. He had therefore begun the treatment by the administration of the creosote in glycerin and whisky. He had found that pure glycerin was often absorbed and assimilated by many persons in such a way as to take the place largely of cod-liver oil, particularly in summer. He had tried various forms of pills and capsules, but was convinced that the alcoholic solution was the best method. He felt that the Germans were wrong in the attempt to give extreme doses of creosote; it certainly could not be tolerated by many stomachs here in America. For the last three or four years he had used creosote in the form of inhalations, and with the greatest confidence. An alcoholic solution of creosote is added to hot water, and by means of a croup-kettle, or similar apparatus, the room is kept filled with the vapor of the creosote. The patient was directed to spend an hour or more, two or three times a day in a room filled with this vapor. When used in this way it occasionally caused an obstinate headache, and this could only be controlled by temporarily discontinuing the creosote. It was only when the creosote was pushed to the extreme limit that he had observed any deleterious effect on the kidneys. Still, it was well to test the urine once a week. He was not prepared yet to state how creosote acted; it was probable that it acted, (1) by promoting the general nutrition, and (2) by rendering the "soil" inimical to the growth of the tubercle bacilli. The fact that the soil was an exceedingly important matter was well shown by the many patients who retained the tubercle bacilli most obstinately in their systems, and yet for long periods of time they would be quite comfortable notwithstanding the presence of these microbes. Regarding the climatic treatment, the speaker said that patients did better in the high altitudes of Switzerland than in those of Colorado, particularly as regards a less tendency to hemorrhages. For patients who, when in health, dreaded cold weather,

he did not think the Adirondacks were suitable; it was much better to send them to Asheville, N. C., or to the sandhills of Georgia, near Augusta. He felt convinced that if proper sanitaria for consumptives could be established in this country in the vicinity of sulphur springs, it would be a decided advance. This was no new thing, for it was a common practice in France to send phthisical patients to such resorts. As he believed hydrotherapy was in the main too severe for phthisical patients, and had but little faith in it, he had had comparatively little experience with it.

Dr. Andrew H. Smith said that we were justified in approaching a case of pulmonary tuberculosis with some degree of hopefulness. We should also realize that the tubercle bacilli almost never get an active hold except where the system is in an abnormal condition, From this it followed that there was an antecedent aberration from perfect health, and to this we should first of all direct our attention. Another point which he desired to emphasize was that the ideal treatment was made up of a mass of minute details, and that reliance was not to be placed on any one thing to the neglect of others. Anything which was likely to improve the general nutrition of the patient should receive the physician's earnest consideration. A minute study should be made of the individual requirements as to diet; it was quite possible to overfeed these patients, and do them harm thereby. Where the stomach was inadequate for the demands made upon it he had resorted to rectal alimentation with great satisfaction. He cited one case in particular, of very advanced phthisis, which had been marvelously improved when almost at death's door, simply by the use of enemata of defibrinated beef-blood. All the usual methods of treatment had been previously tried, together with the rest and other advantages which a good hospital could afford, yet no improvement had been noticed until the adoption of the rectal feeding. He had seen the ability to take and assimilate food very decidedly increased by the use of oxygen inhalations. In his opinion, the condition of the blood should be more carefully studied than is usually the case. The florid appearance of the face often misled the physician into the belief that the blood was in good condition, whereas, in reality, there might be present a condition of extreme anemia. Another therapeutic resource which he considered of benefit was pulmonary gymnastics. If the catarrhal condition found in these individuals in the apex of the lung were controlled, the soil would be rendered less favorable for the tubercle bacillus. He believed that the benefit derived from the creosote was largely due to its action in checking the bronchial catarrh. Measures, which had for their object the free distention of all portions of the lung were calculated to do much good in a certain class of cases. Playing on wind instruments often acted beneficially in this way. The best results in the way of the climatic treatment in this country that he had seen had been in patients who had been sent to El Paso. The climate is exceedingly dry, and there are sand-storms there, but these did not seem to exert any pernicious influence on the phthisical patients. The only drawback at present was the lack of proper hotel accommodations.

Dr. S. Baruch said he would regard it as very expedient to express any but a very guarded opinion regarding the patient's true condition until he was thoroughly acquainted, not only with the exact extent of the disease process, but also with the temperament of the individual. Minute attention to detail was important. The patient should be seen as regularly, if not so frequently, as a case of typhoid fever or pneumonia. It is just as important to keep a diurnal record of the temperature and other vital signs as in an acute disease. He was of the opinion that the successful treatment of phthisis stood upon the tripod—air, water, and diet, In view of the very varied climates usually recommended, he did not lay as great stress as many did upon the climatic treatment of pulmonary tuberculosis. Any climate which possessed a pure, dry air, and was free from dust, and moisture, and rapid variations of temperature, seemed to him to answer the purpose very well. The fact that a large number of the cases treated at the Montefiore Home, in an exposed situation on Washington Heights, gained decidedly in weight, and approved in general nutrition, was sufficient evidence that much good could be accomplished without change of climate. The "air" treatment consists in exposing the patient to fresh air day and night, as can be done in sanitaria. The cardinal rule should be that patients, with a temperature over 99.5° F., should not exercise at all, but should rest in the open air, and sunshine, while covered with warm clothing. The stimulating effect of proper hydrotherapy on the cutaneous vessels was beyond cavil. It could and should be done without shock. It was not safe to use water of a temperature below 65° F., or at a pressure below twenty-five pounds. Philadelphia cream cheese, which consists of the entire milk without the whey, was an excellent article of diet for phthisical patients. He had found that creosote usually disturbed the stomach, and was of but little value except for bronchial complications.

Dr. Henry P. Loomis said that he had never seen the beneficial results from tuberculin which had been described by Dr. Hance. There were certainly a larger proportion of hemorrhages at the Adirondack sanitarium than in many other similar places. He agreed with the reader of the paper that it was decidedly the best plan to tell the patient plainly and frankly the nature of his malady. He had become convinced that the method of employing creosote advocated in the paper was the best one, and he had used it for a number of years. The climate should be chosen in accordance chiefly with the individual temperament, rather than with reference to the disease. In his opinion the dietetic treatment came next in importance to the climatic treatment. He would divide the disease into three stages, with reference to the condition of the stomach, viz.: (1) Where no gastric disturbance exists; (2) when no solid food can be taken; and (3) from the time no solid food can be taken until the case terminates fatally. These stages, he had found, did not ordinarily correspond with the changes in the physical signs. In the first stage, three meals a day were not usually sufficient. The mat-

ter of stimulants had not yet received consideration in this discussion. He felt that in the first stage stimulants should be avoided, unless it be in the form of porter, taken with the meals. Stimulants are more useful in the last stage.

Dr. Walter James said that nothing had been said about the importance of the patient's mental attitude toward his disease. He thought we must now admit that nervous or mental influences constantly interfere with or assist us in our efforts to battle with disease. Grief or sudden depressing influence seemed to him to be a common cause of exciting the disease to renewed activity. He believed that we should tell the patient plainly the nature of his disorder, for otherwise we could hardly hope to secure the necessary cooperation of the patient. The tuberculin of some years ago was a failure, yet there were elements connected with it which seemed to indicate that there might be yet much of value in it. The fact that phthisis was treated by creosote by so many different physicians in all parts of the world showed that the treatment must be of some value. Personally, he was of the opinion that, in addition to its beneficial influence on the general nutrition, there was some, perhaps slight, specific action. He had tried the effect of creosote on other cases than phthisis, in which the nutrition was defective, but had not observed the very decided benefit so commonly seen in phthisis. In some cases he believed that very small doses of codein or morphin were indicated in addition to the creosote in the early stages of the disease. In prescribing climate, we should select one materially different from that in which the patient had acquired his disease.

Dr. Achilles Rose said that he had been informed that in the Montefiore Home and other similar institutions there had been an alarming number of tubercular infections. This was certainly a serious disadvantage in such sanitaria.

Dr. Woods Hutchinson of Buffalo said that the whole trend of the discussion had been in favor of measures having for their object the increase of the resisting power—in other words, improving the strength and activity of the leucocytes. Phthisis, he said, was undoubtedly a disease of weaklings. Any climate, therefore, which would encourage the individual patient to live outdoors should prove beneficial. The same might be said of medicines, for almost everything in the materia medica had been recommended for this disease. Among the lower animals in their natural wild state, it should be noted that there was a special immunity to this disease. The same might be said of human beings, for the Indians of the Pueblos were subject to it, while the Indian in his native wilds was comparatively exempt from it. In the lung was to be found the youngest tissue in the human body; the last organ to appear was always the first to go. Thus, in the lung itself, the apex is an atrophying rudiment, and it is just here that tuberculosis develops in about ninety per cent. of the cases. The right apex is now considered to be the atrophying rudiment of a lobe which originally extended up toward the jaw. Where growth is going on rapidly in the bones, *e.g.*, the extremities, we found a peculiar tendency to the development of tuberculosis. A similar remark applied to the intervertebral cartilages, where Pott's disease was so liable to occur. Therefore, from the standpoint of comparative pathology, the same conclusions seemed to be reached as had been arrived at by clinical research and treatment. He thought we had in our own tissues a more effective protective agent and antitoxin than the venom of the rattlesnake against the enemies about us.

Dr. Hance, in closing the discussion, said that he had been particularly interested in the discussion, because it had enlightened him regarding the effect of the medicinal treatment of pulmonary tuberculosis irrespective of the influence of climate. Any one who had heard the bitter upbraidings and reproachful remarks of patients coming to the sanitarium, because their physicians had not told them at the outset the nature of their trouble, could hardly fail to be convinced of the expediency of being frank with such individuals. Regarding the statement as to the unusual frequency of hemorrhages in the Adirondacks, he would say that in most instances it would be found that that these hemorrhages had been brought about by imprudent exercise. As a nutrient he had found it advantageous to use somatose, made into a paste with hot water, and then dissolved in milk or cocoa. Its flavor was agreeable. He had found that slight stomach derangements yielded readily to the use of a preparation known as aquozone. As a general rule, it might be said that stimulants were not advisable in the first and second stages. In conclusion, he expressed the opinion that climatic treatment was *the* method; it was certainly the one which medical men adopted most promptly when they found themselves afflicted with pulmonary tuberculosis.

REVIEWS.

Outlines of Materia Medica and Pharmacology. A Text-book for Students. By H. M. Bracken, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine, University of Minnesota. Philadelphia: P. Blakiston, Son & Co.

It is easy to understand the purpose of this book, but why it should come from the hand of a college professor, and why it should seek circulation outside of the circle of his own students is not so plain. It is a compilation of the pharmacopeia, and of a number of well-known handbooks, such as Curtis' "General Medicinal Technology," and Wood's "Therapeutics." The book will be of practical use to students pursuing a course of college lectures, as furnishing a series of pegs upon which to hang a completer knowledge of Materia Medica. The author has not designed the book as one from which to learn practical therapeutics, nor as a book of reference for practitioners, and indeed the absence of suitable indexes would render it useless for any such purpose. As a book of reference for undergraduates, in their attempt to memorize medicinal technology the book will fill a place, such as is usually supplied in each center of medical education, by some enterprising student or quiz-master.

An American Text-book of Surgery for Practitioners and Students. By Charles H. Burnett, M.D., Phineas S. Connor, M.D., Frederick S. Dennis, M.D., William W. Keen, M.D., Charles B. Naucrede, M.D., Roswell Park, M.D., Lewis S. Pilcher, M.D., Nicholas Senn, M.D., Francis J. Shepherd, M.D., Lewis A. Stimson, M.D., William Thompson, M.D., J. Collins Warren, M.D., and J. William White, M.D. Edited by William W. Keen, M.D., and J. William White, Ph.D., LL.D. Second edition. Carefully revised. Philadelphia: W. B. Saunders, 1895.

Three years is a short period in the history of medical science, but so rapidly have improvements followed one another in surgical matters, during the past three years, since the first edition of this text-book appeared, that, in revising the work, it was found necessary to add some topics and to amplify others.

The lacunæ, which the reviewer of the first edition was able to point out, have been, in a great measure, filled, and such chapters as that of the Hartley-Krause method of removing the Gasserian ganglion; the use of the Murphy button in intestinal anastomosis; castration for the cure of enlarged prostate; Witzel's method of doing gastrostomy; that on symphyseotomy, and a number of others, have prevented the reviewer of to-day from readily discovering a subject which has been omitted. There were, too, in the first issue, certain errors which escaped the notice of the editors and proof-readers. Some of these have been corrected in the text, others by inserted slips, while others have still eluded observation, and remain for the student and reader to discover. Under "Anesthetics," cocain receives less attention than it deserves, and the man who did so much to bring its value into prominence deserves a better fate than to have his name appear as "Kohler."

The subject of erysipelas is inadequately treated, and ichthyol, which has surely proven itself a most valuable remedy, is not mentioned.

The surgical diseases of the skin are not discussed in a manner worthy of such a work, and the treatment recommended often leaves much to be desired.

Little is said about the treatment of inoperable malignant growths by injections, especially with the toxins of erysipelas, but since the gravest doubts exist as to this method ever being of real utility, perhaps the less said about it the better.

The personal element, which is so attractive a feature of the writings of a single author, when he is a master of his subject, is almost totally lacking in a work of this kind. It is further to be regretted that the name of the writer is not indicated for each individual chapter, since it naturally often adds interest to know to which particular one of the collaborators the views advanced should be attributed.

Passing to the more strictly surgical portions of the work, and especially to those chapters which deal with actual operative work, and the descriptions of technic, and we find here so much to admire that we forget almost to criticize. Every surgical disease and every operation having a just claim to recognition has been at least touched upon, while many have been discussed at length.

All that is best in American surgery is here adequately reflected, but the objective point of making this an American text-book of surgery, and not simply a text-book of American surgery, has never been lost sight of.

The art of book illustration has reached a high degree of perfection, and one unwittingly forms an opinion of a work nowadays by glancing over the pictures. Such a course would do an injustice to the text in the present instance, for, while the cuts and plates are numerous, they are by no means of superior beauty of execution.

Clinical Lectures on Abdominal Surgery and Other Subjects. By Charles T. Parkes, A.M., M.D., Late Professor of Surgery Rush Medical College, etc. Edited by Dr. A. J. Ochsner, Chicago. The W. T. Keener Company, 1896, pp. 477.

This memorial volume contains an account of more or less of the clinical and experimental work of an ardent and gifted surgeon.

The lectures on abdominal tumors, which occupy the first part of the volume, are particularly lucid and attractive in style, and clearly account for the strong hold which the writer had as a teacher. They are followed by lectures on gunshot wounds of the stomach, including experimental work indicating careful and cultivated observation, renal calculus, and surgical operations upon the kidney, tuberculosis, and general clinical surgery.

The impression which is produced by the reading of this volume is essentially the earnestness and intensity of the writer. The field which he occupied must have been a large one, and the gap caused by his too early departure must be correspondingly large. His friends who cherish his memory have good reason to rejoice in this permanent record of his useful life and services.

The International Medical Annual and Practitioner's Index. By Thirty-seven Contributors. New York: E. B. Treat, 1896. Pp. 728, (including forty-six introductory pages and full-page illustrations).

The present is the fourteenth year of this work of reference for medical practitioners, and is so far up-to-date that the new photography is not omitted. Concerning this compilation of abstracts there is but little to remark. It shows much industry and considerable reading, and will doubtless be useful to the practising physician. We could wish that more representative papers had been studied in some instances, and that the more recent literature had been drawn upon. Of noteworthy sections may be mentioned Hare's therapeutic review for the past year, and the special articles by Thies, Jennings, Thorburn, and Smith. The last, however, does not completely cover the literature.

Although the space devoted to the several departments is not always in accordance with their relative importance, yet a study of this work will be of benefit in enlarging the knowledge of the careful practitioner.

THE NATIONAL FORMULARY (Supplement to the National Dispensatory). Philadelphia and New York: Lea Brothers & Co., 1896. Pp. 115.

THIS new and revised edition contains 454 formulas. Some of these are from the "United States Pharmacopeia" of 1880, others are from various official sources, and many are formulas the result of careful experiment, to meet a demand for elegible preparations of commonly used drugs. The arrangement is alphabetical, synonyms are frequent, and considerable information besides that of mere preparation is contained in these clearly printed pages. This should be conveniently at the hand of every physician who wishes to meet indications with accurate dosage and acceptable preparations. By strictly adhering to the nomenclature and authority of this volume, the various trade preparations which are lauded in advertising pamphlets would soon fail of finding a market, and the progressive practitioner would find his usefulness increased.

THE RETROSPECT OF MEDICINE. Edited by JAMES BRAITHWAITE, M.D., Lond., Obstetric Physician and Surgeon to the Leeds General Infirmary, etc., assisted by E. F. TREVELYAN, M.D., Lond., B. Sc., M. R. C. P., Assistant Physician to the Leeds General Infirmary, etc. London: Simpkin, Marshall, Hamilton, Kent, & Co., 1896. Vol. 112. Pp. 431.

THE convenient volume which summarizes the progress of medicine and surgery for the last half of the preceding year, comes to us bearing the same evidence of careful reading, accurate abstracting, and judicious selecting, which have made Braithwaite the mentor of progressive practitioners for more than half a century. Although of small bulk, this volume fairly represents the real advance of the science of healing.

COLOR-VISION AND COLOR-BLINDNESS, A Practical Manual for Railway Surgeons. By J. ELLIS JENNINGS, M.D. Philadelphia: The F. A. Davis Co., 1896. 8vo., 110 pages, with a colored plate and twenty-one photo-engravings.

THIS little brochure, neatly gotten up, discusses concisely and clearly, the subject of color-blindness, and the methods of detecting the same. The tests employed are Holmgren's and Olliver's modifications. The author is to be congratulated in that he goes no farther into the abstruse physics of the subject than is essential to clearly elucidate the points under discussion. The book cannot but prove of great value to those for whom it is written.

MATERIA MEDICA AND THERAPEUTICS. Third edition. JOHN V. SHOEMAKER, M.D. Philadelphia and London: The F. A. Davis Co., 1895. Pp. 1100.

IN the preface to this, the third edition, the author makes particular mention of the fact that the two volumes of previous editions have been combined into one. In the two years that have elapsed since the second edition, much new material has been added with reference to hydrogen peroxid, trional, and various compounds of naphthol and phenol, and a number of sections deal with drugs discovered since the publication of the second edition. Revisions have also been made to conform with the U. S. P. of 1890. The volume, of a little over 1100 pages, is clearly printed on paper that is smooth, without reflecting a glare of light.

In any scientific treatise, dealing with a successsion of separate items, the choice must be made between systematic and alphabetical arrangement. For a lecture course and for a text-book for students, the former is a preferable, but, considering the impossibility of making a satisfactory classification of drugs, the author has done wisely in putting before the practitioner, an alphabetical arrangement of the materia medica.

We regret that the metric system has been practically ignored. Although the statements of doses in grains and of proportions in grains to the ounce, will doubtless suit the majority of the profession, we do not think that the convenience of the very considerable minority of metric prescribers should have been entirely ignored, especially as the apothecary's system is no longer official except by tolerance. Except for comparatively unimportant drugs, black-letter headings divide the discussion according to pharmacology, physiological action, and therapy. Each subject is handled concisely but quite fully.

ANNOUNCEMENT.

TETANUS ANTITOXIN.

TETANUS ANTITOXIC SERUM.
PREPARED IN THE BACTERIOLOGICAL LABORATORY OF THE CITY OF NEW YORK.

THE NEW YORK CITY HEALTH DEPARTMENT is prepared to furnish antitoxic serum for the treatment of tetanus. Each vial contains 20 c.c. of serum, having an immunizing power of 1 to 3,000,000; *i.e.*, one c.c. of serum protects three million grams of guinea-pigs in weight from a fatal dose of tetanus toxin. The average initial dose of the serum varies with the age of the patient, the gravity of the case, and the time when treatment is begun.

The remedy is administered by deep hypodermic injections, a large syringe (such as has been employed for diphtheria antitoxin) being preferably employed for the purpose, although an ordinary hypodermic syringe carefully cleaned may be used, the barrel of the syringe being repeatedly filled. Some point on the anterior surface of the body should be chosen for the injection, where there is an abundance of subcutaneous cellular tissue, as the anterior surface of the abdomen, or thorax, or the outer surface of the thigh. Before the remedy is administered the skin should be carefully washed with alcohol, or some disinfecting solution, and the syringe carefully sterilized and then washed with sterilized water. The solution is rapidly absorbed, and it is better not to employ massage over the point of injection.

IT IS OF VITAL IMPORTANCE IN TETANUS THAT THE ANTITOXIN BE ADMINISTERED AT THE EARLIEST POSSIBLE MOMENT, AS THE DOSE REQUIRED TO NEUTRALIZE THE TETANUS TOXIN ABSORBED INCREASES WITH GREAT RAPIDITY WITH EACH HOUR'S DELAY.

When the treatment is begun at the first appearance of

tetanic symptoms and they do not point to a very severe infection, and especially when the incubation period has been long, *e.g.* two weeks; one vial, or 20 c.c., may suffice for the first injection, and, according to the results, one-half the quantity or the same quantity should be repeated at intervals of from six to twelve hours during the four following days.

If the infection is intense, as shown by a short incubation period, *e.g.* five to eight days; or by the rapid development of the tetanic symptoms, and by the predominance and intensity of bulbar phenomena, or if the treatment is begun several days after the appearance of the tetanic symptoms, even if at the time of injection they are not severe, the contents of one vial should be at once injected, and the dose repeated at short intervals, according to the effect produced on the tetanic symptoms.

The doses required where the wound has been previously untreated, even if the symptoms are slight, are usually large. The dose for children under twelve should be one-half or less that for an adult. The use of tetanus antitoxin does not preclude the employment of other remedies, such as chloral, the bromids, physostigmin, or morphin. Some one or more of these remedies should be employed in full doses. It is also thought to be advantageous to give large amounts of water to the patient for its diuretic effect, as the tetanus toxin is eliminated by the kidneys.

Where tetanus follows some wound of the surface, this should be treated freely with some preparation of iodin in solution, to destroy the toxins in it. The ordinary antiseptic solutions, such as carbolic acid, and bichlorid of mercury, are of little value for this purpose.

The exact value of tetanus antitoxin in the treatment of this disease, and the best method of administration, have not been fully determined, and the Health Department of the City of New York specially requests that all persons using this preparation of antitoxic serum will forward a full report to the Department of the case, and the results of treatment.

All public institutions in New York City, on application, will be furnished with tetanus antitoxin free of charge.

Address "The Bacteriological Laboratories," Health Department, Criminal Court Building, Centre street.

Telephone, "448 Franklin."

Approved by the Board of Health at a meeting held May 19, 1896.

Charles G. Wilson,
President.

Emmons Clark, *Secretary.*

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 5, 1896, to May 11, 1896.

Major Daniel G. Caldwell, Surgeon, having been found incapacitated for active service by reason of disability incident to the service, is, by direction of the President, retired from active service this date, May 2, 1896.

Captain Charles E. Woodruff, Assistant Surgeon, now at Fort Sheridan, Illinois, is detailed for temporary duty as Attending Surgeon in Chicago, retaining his station at Fort Sheridan.

From May 19, 1896, to May 26, 1866.

Captain Richard W. Johnson, Assistant Surgeon, granted leave of absence for thirty days, to take effect about May 14, 1896.

Lieutenant Colonel William E. Waters, Deputy Surgeon General, granted leave of absence for two months, to take effect on or about July 1, 1896.

Major H. O. Peuley, Surgeon, granted three months leave of absence, to take effect about July 1, 1896.

First Lieutenant James M. Kennedy, Assistant Surgeon, Fort Missoula, Montana, ordered to Fort Yellowstone, Wyoming, for temporary duty with troops in the field, in the National Park, during the season.

Promotions.

To be Assistant Surgeons, with the rank of Captain, May 4, 1896, after five years' service:

First Lieutenant William F. Lippitt, Jr., Assistant Surgeon.
First Lieutenant Merritte W. Ireland, Assistant Surgeon.
First Lieutenant George M. Wells, Assistant Surgeon.

Official List of the Changes of Station and Duties of Medical Officers of the U. S. Marine Hospital Service for the Fifteen Days Ended May 15, 1896.

Murray, R. D., Surgeon. To inspect quarantine ports on Gulf Coast of Florida, West of and including Apalachicola and the coasts of Alabama and Mississippi, May 1, 1886.

Bailhache, P. H., Surgeon. To inspect quarantine ports on the coasts of Connecticut, New York, and New Jersey as far South as Sandy Hook, May 1, 1896.

Purviance, George, Surgeon. To inspect quarantine ports on coast of New Jersey, South of Sandy Hook, and on Delaware Bay and River, May 1, 1896.

Sawtelle, H. W., Surgeon. To inspect quarantine ports on the coasts of Louisiana and Texas, May 1, 1896.

Austin, H. W., Surgeon. To inspect quarantine ports from Northern port of Maine, to extreme northern port of Rhode Island, May 1 1896.

Stoner, George W., Surgeon. To inspect local quarantine station at Baltimore, Md., May 1, 1896.

Godfrey, John, Surgeon. To inspect quarantine ports on the coast of California, May 1, 1896.

Carter, H. R., Surgeon. To inspect Cape Charles Quarantine Station, and quarantine stations at Newport News, Norfolk, and Richmond, Va., and quarantine ports on the coasts of North and South Carolina, Georgia, Florida, and the coast east of Apalachicola, excluding Key West, May 1, 1896.

Peckham, C. T., Passed Assistant Surgeon. To inspect quarantineports on the coast of Washington, exclusive of ports on the Columbia River, May 1, 1896. Granted leave of absence for thirty days on account of sickness, May 15, 1896.

Hasdin, Eugene Passed Assistant Surgeon. Granted leave of absence for two days from May 14, 1896.

Guiteras, G. M., Passed Assistant Surgeon. To inspect local quarantine station at Key West, Fla., May 1, 1896.

Perry, J. C., Passed Assistant Surgeon. To inspect quarantine ports on the coast of Oregon and the Columbia River, May 1, 1896.

Sprague, E. K., Assistant Surgeon. To proceed from Mobile, Ala., to Boston, Mass., for duty, May 1, 1896. To defer departure for Boston, Mass., until return of Surgeon Murray, May 6, 1896.

Cumming, H. S., Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty, May 12, 1896.

Mathewson, H. S., Assistant Surgeon. When relieved at Boston, Mass., to proceed to San Francisco, Cal., for duty, May 1, 1896.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXVIII. NEW YORK, SATURDAY, JUNE 6, 1896. NO. 23.

ORIGINAL ARTICLES.

ADDRESS OF WELCOME TO THE AMERICAN GYNECOLOGICAL SOCIETY.

BY WILLIAM T. LUSK, M.D.,
OF NEW YORK.

A SHORT time ago our honored president called upon me to say that he desired that I should this year deliver the address of welcome, and to my demurrer recalled to me the fact that the choice had fallen upon me because I was now among the veterans. And yet it seems to me only a little time since I was secretly hoping that our friend Chadwick, in making up the list of those to be honored with membership, would not regard too rigidly my somewhat budding claims.

At the first meeting twenty-eight voices answered to the roll-call, and thirty-nine were chosen members. Among them were Sims, Emmet, Peaslee, Thomas, Parvin, Battey, and Goodell, all pleasant sounding names. Those were halcyon days. Barker, with his born gifts of oratory, was our first president. It is a delight, at this day, to recall his face, "Filled with a fine old-fashioned grace, fresh-colored, frank, with ne'er a trace of trouble shaded."

But twenty years have passed by. Of the thirty-nine original members only fourteen remain. A few have resigned. Most have gone to the silent land. This Society was not, however, founded that we might walk according to the traditions of the elders. It has been constantly strengthened by the accession of eager, active, progressive, younger men, who have helped greatly to keep its interests in the things of to-day.

At the first gathering, Thomas, in his address of welcome, said: "American gynecologists look with high hopes to the future of this Society." In the changes twenty years have wrought those hopes have been nobly realized. Membership is a coveted honor. Its Transactions are of the highest rank, filled not only with instructive clinical material, with contributions to pathology, and with expert criticisms of current questions, but which contain a number of papers like that of Noegerath on latent gonorrhea, of Emmet upon a new method of repairing the perineum, of Byrne upon the use of the galvano-cautery in operations for cancer of the uterus, of Polk regarding operations upon the uterine appendages with a view of preserving the functions of ovulation and menstruation, and of Henrotin upon the conservative treatment of para- and peri-uterine septic diseases, which have had a wide-reaching influence upon the practice of gynecology. Chadwick may well be proud of his creation.

The past twenty years have witnessed the perfecting of surgical methods. Wonderful as the results have been, it is to be borne in mind, however, that up to the present, surgery has been largely employed to destroy, whereas its highest function is to save organs, to preserve functions, to make the sick whole. Strictly speaking, the removal of organs should not be the ground of boasting, but should require explanation and apology. Let us indeed hope, that in the great coming work of gynecology, viz.: in the multiplication of resources for the restoration of diseased tissues to health, we will have the good fortune to take the lead.

But I will not detain you from the important business of the day. In extending to our guests the welcome of the New York members of this Society, I am reminded how Homer says that "Ajax, having won renown in war, received by way of distinction whole 'chines of beef,' it being considered that an honor which, besides the glory of it, would augment his physical strength, was peculiarly appropriate to a brave man in the prime of his manhood."

We too, on this occasion, will seek to honor our meritorious members, as we are taught was the custom in Plato's Republic, "with goblets filled to the brim, and meats, and places of honor."

A RETROSPECT OF TWENTY-ONE YEARS OF GYNECOLOGY AND OBSTETRICS.[1]

By WM. M. POLK, M.D., LL.D.,
of New York.

The honor conferred upon me, one year ago, makes it my province and privilege to address you from your president's chair upon this, your twenty-first anniversary. The three sevens composing the period, comprising infancy, childhood, and youth, culminate in the twenty and one, which marks the boundary between youth and manhood. But he would be a bold man who, in any day, month, or year of your existence, had denied you the attributes which pertain to maturity, or had questioned the possession of the graces and accomplishments which mark the attainment of years of discretion.

Like Minerva Medica, you sprang full armed and capped from the busy brain of that wise and active ambition which has ever since shaped your successful and beneficent course.

Launched into the arena, this Society at once exercised those guiding functions which age and experience warrant, and which have ever been justified by its subsequent course. Is it any wonder, then, that I should feel abashed, rather than elated, when here in your presence, in this city of your birth, in a chair hallowed by the lofty spirits of predecessors who touched the springs of action in a way none of us can rival, I attempt to address you as your presiding officer? I do indeed thus stand before you to-day, and seeking for a theme wherewith to gain your ear and lead your thought, have not been able to do better than seek my inspiration from those who have preceded me.

Looking over the addresses which have marked your annual gatherings, I have found in that of your first president the line of thought I shall endeavor to present to you to-day.

The erudite and genial Barker found ample store in casting a retrospective eye over the field of science and practice, which stretched back over the hundred years preceding your advent. With here and there a towering peak, such as the initiation of ovariotomy and anesthesia, the view, as a whole, suggested perhaps too much the calm, unbroken aspect of the plain. But, peaceful as seemed that repose, one could hear the distant rumbling and feel the swaying undulations, which told the coming of upheavals soon to break and throw in rugged, unformed masses the ground on which you stood. To you, as much as to any one body of men, fell the task of meeting and shaping the outcome of this upheaval. Forewarned, you came forearmed, and he who reads your deeds, as chronicled in the volumes of your "Transactions," can but be proud to find himself one of such a band of fearless, able workers for truth. In retrospect, I too shall hope to find my inspiration, restricting it to the twenty-one years covered by your existence.

My task is all the easier, seeing that of all the potent, far-reaching questions raised by the upheaval, not one has escaped searching inquiry at your hands, and many have found their solution in your work.

Even before your birth, the impress of Pasteur's work was such that already there were signs of revolt against the accepted theory of inflammation. No one could be more keenly alive to the possibilities of the situation than the men who worked here, for of all who dealt with the mysteries of injuries and repair, they trod upon ground most exposed. The organ constantly before them for investigation and treatment had a more direct connection with what was then classed as a "vital spot" than any other in the body. And this so-called vital region, the peritoneal area, was more so because of its ill reaction to inflammation than from any other cause, and the frequency with which it became inflamed after interference with the uterus, marked the latter organ with dangers which terrorized all who approached. For who could fail to hesitate before and perhaps dodge the issues presented by an organ which, if but scraped by a curette or incised at its outer face, would respond by initiating a fatal peritonitis. And if dread-oppressed when dealing with the peritoneum at this long distance, how much more must it have weighed upon him who contemplated a direct attack upon it. Scant comfort could be found in contemplating the best results obtainable, even by the expert in abdominal surgery. A mortality of twenty-five per cent. did not conduce to confidence, especially when he found that the seventy-five per cent. successful issues had come in many only after dire experience with surgical, now better known as septic fever. With a braveness of spirit which we, in our smooth course along the same road, can hardly appreciate, he fought on, dismayed at times, no doubt, but not disheartened. Questioning himself he asked, where lay the defect? Could it be in manipulative skill, he set himself to improvement here. Perhaps it resided in the patient, so every detail of bodily action was scanned, with a view to improvement. Perhaps it lay in atmospheric changes, so certain

[1] The President's Address, delivered at the twenty-first meeting of the American Gynecological Society, in New York, May 27, 1896.

seasons of the year were condemned as unfit for such delicate work. Hospitals were brought under suspicion, unless they possessed special and elaborate systems of ventilation. And so suspicion turned from one thing to another, and still the evil eluded detection. The surgical mind had finally come to view inflammation in injury of any kind as an element of doubtful good, or, at best, as something forced from nature as a protective agent against an evil which should not exist, at least in traumatism inflicted by the surgeon. In the abscence of proof that it was any one particular thing, opinion finally rested upon the conclusion that dirt or filth of some sort was the offending matter. And leaping in a bound across the whole field yet to be illuminated by bacteriological research, with unerring instinct it placed its finger upon the fault. But when action was deduced therefrom, the lack of knowledge of the essence or nature of this fault led to measures of eradication, which in themselves led up to results too much related to those it had been hoped to eradicate. Thus it was that wounds, even in your day, were treated not wholly unlike they were in the days of Paré; and we would not marvel if the sprays in which you worked had at times clouded the renal epithelium of more than one of you. But, spite of it all, you lived to see the day when the essence and nature of the fault lay bare. The patient labor of bacteriology has shown it to you, and in so doing has permitted you, above all men, not merely to share, but to lead in the triumphal march of modern surgery.

But a short time before this Society was organized, the field of gynecology was largely dominated by the cervix; in fact, it is scarcely an exaggeration to affirm that the cervix so far obscured the remaining pelvic field that many would-be gynecologists contented themselves with treatment of what could there be found. In view of this state of things, and in face of the methods of pelvic investigation even then pursued by the profession at large, it is not surprising that the leaders who pointed to other fields should have been met by the oft-repeated assertion of his compeers in other fields of surgery that the sign of the gynecologist was a cylindrical speculum and a stick of nitrate of silver and that he must recognize these as his limitations.

The sarcasm seems to have cast a paralyzing influence upon the perceptions of those who justified it, for, acting well within the sphere assigned, they were content to take it as passed on to them, find in it ample excuse for endless woes and almost endless treatment. It remained for a leader in this Association to unfold the secrets of its lesions, to establish their courses, to indicate their true relation to coexistent disorders, how best to cure, and in this elucidation not only to lift what opprobrium had attached to the exclusive concern of so many with the cervix, but to demonstrate that germ of truth so often hidden in the biting word, and whose fulness so often pulls its fangs. For lesions of the cervix are far-reaching, as the labor of this man has forever proven, and yet he marked their limitations, and in doing so has met with fellow-workmen tracing boundaries in other portions of this prolific field, and he and they have so enlarged, have so elevated its plane that the scoffer, lost in admiration, turns himself to imitation, that sincerest form of flattery. It is difficult to overestimate the value of Emmet's work, but in this field we can at least approximate it. Differentiation and classification are accomplished facts, and a rational and successful treatment has been inaugurated. But the influence of his work did not cease even here; it went further, and, bringing home to us the major causes, it has done that best of all, viz.: provided prophylaxis. In these days of accepted plastic surgery of the cervix, we scarcely realize the wearying routine of treatment to which these cases were subjected, the endless repetition of that "local treatment," which, after all, left perhaps a scarred, contracted structure, cured to the uninitiated eye, yet suffering in its depths a change in connective tissue and glandular elements, themselves the pivot of continuing symptoms, which, in despair, the baffled attendant set down to conditions far outside the field whereon he had labored, as he thought, so well. And now how changed is all this. Commencing with the parturient act, we mark the beneficent influence of this man's work throughout the life of every mother. Note the consideration now bestowed upon the cervical segment of the uterus in labor, the care, if torn, with which it is guarded from the influence of sepsis, a care mainly dictated no doubt by the need for immediate protection from the dangers of a general sepsis, but also by what we now know to be the local, as distinct from the constitutional action of such a process upon the lacerated surfaces. What woman is now declared well after parturition before the effects of labor upon the cervix have been studied, and, if need require, remedied; and if she comes to us a sufferer because of lack of this care and treatment, is not our task made easy by what this man has taught us? But great as is this boon, there is another which calls for grate-

ful recognition from every woman compelled to endure the pangs of powerless labor. It is his insistance upon the early use of forceps, not merely to end the strain of unsuccessful effort, but to protect her tissues from that necrotic process, which, coming from the long-sustained pressure of the fetal head, leads direct to fistula of bladder or rectum. Lesions long set down to the use of the obstetric forceps are now known to result more often from delay in use. It was a high privilege to demonstrate and preach such truths; it is more than a privilege to follow such a leader.

Happy is the man who, realizing the baneful influence of conditions revealed at autopsy, yet hidden during life from view, who, baffled in his efforts to unravel them, finds himself at last upon the vantage-ground from whence the evil can be watched in its course, from whence it may be checked. We all can feel this joy, for of all the diseases coming under our care, none have been so elusive as those of the bladder and its associate organs. About the time of your birth, headway had been made in this research, but it is only within the last few years, unqualified success has crowned it. Now direct inspection and treatment of the bladder can be had without violence to its integrity or that of its outlet. This certainly is a great advance for our work. For long we watched the evolution of this method, anxious and willing to seize upon and apply it, for who of us has not had his defeats in time past in this field? Who has escaped the impotent conclusions of at least one case of vesical disease?

Spurred on by dire necessity, we irrigated and distended, we buttonholed urethra as well as bladder, thrust in this and that speculum, and blindly cauterized, but all to little purpose in far too many instances, or, perhaps at the cost of such discomfort to the sufferer as made her shrink from an infliction scarcely less annoying than the state for whose cure it was instituted. And yet, these measures paved the way for that direct and harmless inspection by light conveyed or reflected into the bladder, along a natural channel, which we now enjoy. But it stops not here. What was the relation of your predecessors to disease of the ureters and the pelvis of the kidney? The need to bring those regions more nearly before us was as urgent then as now, and we had already been taught how we might search them with bougies. It were a waste of time to dwell upon this good work, to follow it through the recorded labors of Simon, Emmet, and Bozeman, for it is as familiar to this audience as the alphabet, and yet valuable as it was, because of the difficulties and the lesions entailed, few pursued the method, save in extreme cases. But Kelly and Pawlick have given us the additional light, which not only places the secrets revealed by their predecessors in easy reach of all, but unfolds others heretofore unknown. Thus, the urinary, as well as the genital, system of our subjects, is brought before us in a manner which bids fair to gain fresh triumphs for our guild.

Allied to this subject is another whose bearing upon our problems is scarcely less than those just passed in review.

The floating and displaced kidney has long been known, and some of its evils were recognized, but still its relation to many of the symptoms presented by those who came within our sphere of action was hidden. The relation existing between kidneys of this kind on the one hand, menstruation and the digestive processes on the other, was scarcely appreciated, hence, it frequently occurred that having a patient in whom backache and digestive disturbances, such chiefly as nausea, were aggravated at menstruation, we argued from the association to some disorder of the uterus or ovaries. As few women can be found who possess perfect structures, as the uterus was known to have an influence upon the stomach and as the mysteries of the ovarian influence were as now, still unfolded, the association in question could but tend to direct us to these organs in search of the source of the disturbance. It not infrequently happened that these patients, owing to a general descent of all the abdominal viscera, were treated successfully by an abdominal supporter, and the ease obtained set down to relief of the pelvic organs from the pressure of the superimposed viscera. Moving in this circle, attention was centered upon the pelvis. Ovaries even were sacrificed, only to learn that instead of relief, symptoms were added, the whole presenting a picture worse than the first. No doubt, those ill results helped on the restless spirit of investigation so rife in our time. Be this as it may, the secret now stands exposed before us, so that fixing the kidneys and supporting the other viscera where needed, we gain relief that can be had in no other way.

Closer yet to our field is another whose pathological processes so frequently encroach upon it, we have in times past confounded the two. The vagaries of appendicitis are just beginning to be known, so that one need not always view with suspicion the right adnexa when disturbance arises in and about their region. He may, at least, consider the question open until search has

cleared or condemned them. The appendix, quite independently of the uterus and adnexa, is implicated with sufficient frequency to justify some suspicion toward it. Pain and tenderness in the right iliac region can no longer be dismissed as amenable to a waiting policy. It must be most carefully inquired after, and nowhere is our advance in differential diagnosis more evident than here, nowhere has it been productive of more good, and nowhere in our entire field do we see more clearly the light which leads through prompt action to safety,

Less aggressive than the question of appendicular disease, but more constant and, therefore, more pressing, was that of retrodisplacements of the uterus, and just now it is prolific in discussion. The successes scored in contiguous fields spurred on more than one mind to search for better things in this. Mechanical modes of relief, as distinct from the purely surgical, had held the confidence of most of us, so that as much as anywhere else mere surgery was viewed with suspicion. But so active has been the effort in surgery's behalf, more than one method has been advanced; and in this very fact lies much of the skepticism which still remains. When several plans by which to acquire a given end are presented, one feels, perhaps too often, that all are defective, and this is fostered by the criticism which each advocate bestows upon rival plans in his eagerness to extol his own above all others, for we may be sure he spares no pains to expose the weakness of others in presenting the strength of that he advocates. This is merely human. But, as said, out of it all has grown a spirit of doubt touching all the surgical methods of relief for retrodisplacements. Here, as elsewhere, we must lend our minds to the unraveling of the problem. I well remember a criticism offered upon Alexander's operation when first presented in this country, and a wise one it was. Hunter said it is not so much: can we accomplish such and such a result by a given method, but when done, is the result better than that to be obtained by the plan it is proposed to supplant? Before we can determine, then, this question's relation to the treatment of retrodisplacements, we must first settle upon the above basis which of the several surgical plans of treatment proposed surpasses all other surgical plans in its results, and then we can quickly decide as between the mechanical and the surgical. I do not apprehend you will find much difficulty in solving this, for already your minds, prone to the latter, are ready to abandon the former. To the future, then, the solving of the question must be left, and to this same future belongs the solution of another question.

If you should turn to Volume I. of your Transactions, you will find under the caption, "Extirpation of the Functionally Active Ovaries for the Remedy of Otherwise Incurable Disease," a paper by Robert Battey, which, dealing primarily with that all-important subject, touches, in passing upon this question of the future, "Vaginal *versus* Abdominal Section." Battey confined it to the needs of the situation as presented by the classes of adnexal disease to which the paper is devoted. For us it has been widened, till it now applies to the whole question of intraperitoneal pelvic surgery. I am much tempted to enlarge upon the subject, for I know it is one of peculiar interest to everyone here—to the new members, but particularly to those older members who, when most of those who now come up to our yearly gatherings were but fledglings, had pondered over, discussed, and, in some measure, elucidated its bearings. A new question then to come, it is the revival of an old one to others. And let me say, just here, that he who seeks for guidance in the mazes of this question will save himself much time in research, and gain no little in the essentials of technic, if he will only turn to the past utterances of members of this organization. For, as said, this is not a new question by any means, and, like all others which have been before the medical profession during the days of our existence, it has secured from this Association its due of consideration. A useful inquiry may be instituted as to the causes which led to the abandonment for a time of the vaginal approach to the intraperitoneal pelvic area. It lay in the greater mortality of the vaginal route. The conditions facing our predecessors were mainly those of grosser or larger dimensions, which had, perforce, to be dealt with by abdominal section. This led to the more rapid technical perfection of the latter, and the enthusiasm of successful laparotomy soon eclipsed the claims of vaginal section. Evils whose dimension and location would naturally suggest the latter approach were dealt with too easily from above to warrant effort from below. But finally an acquaintance with pelvic disease, which was only possible from above, has paved the way to a success from below which bids fair to reassert the position of vaginal section for, at least, certain of the lesser evils of the area in question, and perhaps some of its most pressing ones. Prudence warns me to desist from this prolific subject, for one can read in your look of

patient resignation your polite endeavor to accord the Chair attention at the cost of your wearied interest. This he leaves untouched, confident that in the paper of the distinguished guest who follows him this interest will be roused as can be done by none other here. To him and to the future we then leave the question, confident that when the solution comes it will have been gained only after such careful scrutiny, such candid criticism, that doubt will no longer obscure our vision, for then even he who runs may read to full conviction.

Fifty years have passed since Holmes formulated the doctrine of the contagiousness of puerperal fever, and when attacked, spite of his disclaimer that he did not intend to enter upon a quarrel over the counterpane which covers the mother with her newborn babe, he wielded such a trenchant pen he more than held his own. But, after all, it was no quarrel, but the contention of great spirits over a great theme—less contention for contention's sake than the outburst of that high and fearless independence which should always mark the advent of any revolutionary doctrine. It is needless to say that when you first met the doctrine had been accepted, and was part and parcel of your creed and practice, but in spite of the good thereby accomplished, the dread disease still held sway, as witness the papers of your earlier gatherings. You know now why this was so, for everyone here is to-day as familiar, not only with the fact of contagion, but with its essence, its sources of origin, and its methods of propagation, as he is with the simplest act of his daily practice, and yet, till this knowledge came, fear possessed the minds of all related to obstetric practice. Let your mind go back to a lying-in ward in days just preceding the inauguration of this Society. A score or more of healthy women, peacefully waiting an advent, the culmination of Nature's law and the fruition of instincts about which revolve the highest, and too often the basest, of human desire, all equally entitled to life however, if not for their own sakes, at least for that of the helpless beings for whose existence they are in part responsible, and for whose nurture they are essential.

Now look upon them in the neighboring ward, where they are entitled to rest after the ordeal of labor. Instead of the restful and quiet convalescence they now obtain, puerperal fever was then their portion far too often. Fortunate were those who at once entered upon the steep and smooth declivity of sapremia, for they at least enjoyed the repose of easy and speedy death, while others took their way to the same goal, racked with the sufferings of peritonitis and pyemia, or, if escaping, escaping only to find themselves as invalids, facing the cares of mother, wife, and household guide. Is it any wonder that we shrank from the duties of the parturient chamber, where so much doubt and danger pressed upon us? There are some of you who, on mercy's errand, have wound your way amid the dead and dying of the battlefield, where human beings lay so thick that, fearing to profane the dead or injure the living, it was needful to pause and place with care each succeeding step, and again, bent upon a like errand, you have passed from bed to bed, ministering to the wants of women, all stricken with this frightful disease. In one, the awful grandeur of death stood out before you; in the other, its misery. In one, death for high purpose, because of man's ambition; in the other, death in the highest purpose, because of man's impotency. It is easy to tell which scene impressed you most. And yet, the same spirit of ambition, acting in the less conspicuous field, has penetrated the secret of puerperal infection, and at least made safe the path which leads through parturition to motherhood. In all of this you have borne a part which should be cause for self-congratulation to every member of the Society. It has been said that he who lives in the last half of this century has seen more discovered and developed which pertains to man's welfare, his glory, and his divine attributes, than has been realized in any other period of equal length in the world's existence. I believe this to be so, and if asked to place my finger upon the one thing of all this which touches most nearly man's welfare, his glory, and his divine attributes, I must place it upon the discovery which has freed the most sacred act of Nature from the terrors of childbed fever.

In contemplating the triumph incident to parturition, one's thoughts rest for a while upon what was gained to it through invasion of the cavity of the uterus; and, had we not been chiefly mindful of that greatest gain, prevention, we might have paid, in passing, some tribute to the spirit of enterprise which formulated and placed upon a firm basis intrauterine treatment of the septic puerperal uterus. But you are familiar with it all—its advance and recession—till most of its good and its evil are so clearly before you as to leave no one in doubt as to when he should employ it and when avoid it.

Singularly enough, while contention upon this measure was waging, the seeming paradox was

presented of urgency for it in the infected parturient uterus, and urgency against it in the infected non-parturient organ. But, as wider knowledge has annulled the objection to this course in the one case, so it bids fair to set at rest all objection to it in the other, and finally open the structure by unanimous accord to treatment more in keeping with that which prevails in more exposed and less vitally connected organs, and thus reverse the assertion but lately so commonly before you, that prognosis is unfavorable in chronic endometritis and metritis.

Glancing again through the papers of your first volume, I fell upon the following sentence: "We have been taught by experience that it is not safe to perform an operation on the womb while symptoms of perimetritis exist." In other words, that when salpingitis was present, even to a degree devoid of pressing symptoms, such a thing as curettage of that uterus was forbidden. One can scarcely realize the potency of this mandate, unless he follows the evolution of pelvic surgery during the past twenty-five years. Baffled and defeated in many a case of perimetritis, we throw up our hands in helpless impotency. The douche, the pack, and time served their good purpose in some, but too many were left who, labeled "incurable," sank to hopeless invalidism, softened in those of feeble will by the soothing influence of the opium habit. What wonder, then, that we should turn a willing ear to the marvelous stories that came from Birmingham. Here, at last, was the cure for all these dreadful cases of perimetritis. But when proven, the impetus was too great to halt at them. The ease with which relief could be gained, not only for such cases, but for nearly all afflicted with chronic inflammation in and about the uterus, proved so seductive to surgeon and patient alike, the measure had too wide an application. The spirited controversies revolving about this question are things of the past, but not so the results. Out of them has come that calm to which earnest conviction sooner or later tends, and, searching ever for truth, the goal of all our work, we see that perhaps between the extremes some middle ground can be found. From this thought has come the extension of intrauterine treatment to many cases of perimetritis, which now fast becoming the accepted road to alleviation, and perhaps cure, for cases heretofore doomed, on the one hand to hopeless invalidism, or, on the other, to needless mutilation. And while this truth has been dawning, another has been slowly but surely evolved from the incomparable labors of those who attacked the perimetric lesions from within the pelvic and abdominal precincts. It is the fact that surgery here, as elsewhere in securing health, can restore to form and function organs which but lately were exposed only for sacrifice.

Thus working from the extremes of this therapeutic problem, at last we see ourselves approaching a solution which will enable us to so differentiate our cases of perimetritis we can apply that treatment which will give to each its best measure of relief.

Had I the time, and you the patience, other questions in whose solution you have taken part might be passed before you; but enough has been presented to refresh your memory and justify your claim to leadership in the great advances made in our department of surgery during the last twenty-one years. And yet, my task is scarcely finished till I pay some tribute to the members of this Society now with us who, as founders, participated in its birth, who since have done so much for its glory, and who have stood sponsor to so much of the work presented by its junior members. It has been said that the country which lives ever in the present is in danger of creating in the body politic that form of degeneration which sinks it to a level whence its glory can be seen only in its past. Time has its revenges here on earth, and sees many of them evolved where man is touched, from his disregard of laws of conduct. A common lapse just now is that spirit which must always be up-to-date—that one which must ever live in the present. You know what this product is, its superficiality, its selfish disregard of the rights of others, its brazen self-assertion, and out of this, its disregard of truth, and all because it feels some demoniac force impelling it to self-aggrandizement at almost any cost. Get on! get on! it matters little how; but Get on! Gain success, and it will be a shield quite broad enough to cover all misdeeds. This is the up-to-date spirit, the one which has no time to look back and build its conduct upon the lines already marked out; in fact, in many instances does not wish to look back, for, posing as a would-be leader, it is necessary that it should appear as an original. If the field is not new, it must at least be made to appear so. He little realizes that this same spirit is an early manifestation of the degenerative process, which, continuing, will sooner or later present him to himself as full of grace and wisdom, and to others as sounding brass. But out of a loyal devotion to one's ancestry, a jealous care of its fair name, a just appreciation of its merit, a wise appropriation of its

labors, comes a strength of character upon which the best of superstructures may be erected, from which new glories may emanate. So let it be with us. Ever loyal to our forefathers, we will look to them before we go elsewhere for inspiration and for guidance; and to those of them now left to us pay honor in ever minding them of our obligation to their wisdom, their courage, and their fidelity to the trust which they have passed to us.

Yes, gentlemen of the American Gynecological Society, they are most noble models, and in honoring them we give ourselves the highest of all honor.

THE CLINICAL IMPORTANCE OF THE MENSTRUAL WAVE.[1]

By ARTHUR W. JOHNSTONE, M.D.,
of Cincinnati, O.

When this title was given to the secretary, it was my intention to present a strictly scientific paper showing you how the lower animals menstruate. But a recent visit to New York convinced me, as much as I dislike rewriting subjects that I have already handled, that the best use I can put your time to is to ask you to listen again to the clinical importance of the menstrual wave. Menstruation, which occurs in all erect animals, is nothing but a shedding of the superficial layers of the edometrium and is a kindred process to the molt in birds, the dropping of the horns and hair in the deer tribe, as well as the loss of the dermal structures, which occurs periodically in so many different classes of animals. The lower animals menstruate through the lymphatics and the whole time between the rutting periods of the unimpregnated animal is given up to the various functions that are accomplished by menstruation in the upright animals. As the lymphatic stream cannot work anything like so rapidly as a stream of blood which finds a ready exit, of course it takes a longer time to accomplish the removal of the endometrium through the lymphatics, and therefore requires a much longer time for the thorough regeneration of the endometrium. These few statements indicate about what that paper would have been.

I have found, in talking to a number of our leading men, that the clinical importance of the menstrual wave is not appreciated as it should be. And my experience with the blunders of other people (which would have been saved had they understood this law), have convinced me that the best thing I can do is to give you a strictly clinical paper.

[1] Read before the American Gynecological Society, May 26, 1896.

As to what this menstrual wave is, who elucidated it and when it was worked out, I must refer you to a paper of mine on "The Pathological Aspect of the Stephenson Wave."[1] The man to whom this paper refers is Professor William Stephenson,[2] of Aberdeen University. I found in this paper a finished tool ready for practical use. At this time everyone in England was speaking of the Stephenson wave, and as my first paper upon the subject of menstruation was to be delivered to an English audience, I used the term they were accustomed to. Since then, both in season and out of season, I have been impressing the clinical importance of this subject, not only on the gynecologists but on the general practitioner, for I cannot see how any man can do justice to his patients, who has many menstruating females to care for who does not fully understand this whole subject. A prolific writer of this city has recently shown her ignorance of the subject in undervaluing its clinical importance, and as at one time she did some good work on the subject, I fear her influence may put the subject in a false light. She speaks of my high estimate of it as being an "evident and even grotesque exaggeration"; and in another place says it should "guide the therapeutics of all non-infectious utero-ovarian disease."

The applications that I have made of it invade every specialty embraced by our profession, and what I now propose to do is to show you how it is the great *compass*, that every man, who is dealing with menstruating women, ought to have constantly by his side, for without it, many a time he will be led to do very dangerous things and at other times will be very uselessly alarmed over comparatively small matters.

First as to menstrution itself, upon what does this law throw light? Without the definite charts of Professor Stephenson, vicarious menstruation would be an absolute enigma. Now that we know, in the most of these cases, there is a certain amount of hardening of the endometrium, which obstructs the natural outflow of the menstrual fluid, the reflex wave is thrown off to whatever point is weakest and wherever there is a pathological lesion. We now see how this blood may be poured out at different points.

Intermenstrual pain, which used to be a regular conundrum, we now thoroughly and easily understand. It comes in the trough of the wave, when the pressure is at its lowest, when the pelvis

[1] Read before The Cincinnati Obstetrical Society in 1895, and published in volume xxxi of the *American Journal of Obstetrics*.

[2] See his original article in the *American Journal of Obstetrics* for April, 1882.

is anemic and every organ is shrunken to its smallest diameter; then the adhesions to the circumference of the ovaries are put on the stretch, which during the congestive stage would be lax from the swelling of the ovary itself. An ovary with a pathologically hardened tunica albuginea, which, when the pelvis is filled with blood, has the vascular tissue in its interior thoroughly pressed upward, but when this physiological hyperemia subsides during the trough of the wave, and the tissues shrink, this hard surface bends inward and the surface of the ovary is put on the strain. As I have shown in other papers, this necessarily must produce pain, for if there is one law in pathology it is that, without tension there can be no pain. The simplest of all inflamed ovaries, or tubes, or other inflammations about the pelvis, which give pain just before menstruation, are made far more intelligible than they were in the old-time way, when we knew that there was simply a congestion without knowing how it was produced. These are some of the riddles that this law explains, to a man who has little or nothing to do with major surgery. But for the laparotomist this law is of more value than almost any other. It teaches him never to operate just before a period, when he can possibly avoid it. It also explains to us why it is menstruation nearly always follows the removal of the appendages. It also explains that rather rare accident, traumatic hematocele, which follows four or five days after a laparotomy is done. But these are more than "twice-told tales" to most of my audience. The one to whom, it seems to me, this subject is of more importance than to any other is the general practitioner. No matter what branch he may be in, if he has a troublesome symptom, which recurs regularly at any particular point of the cycle of the menstrual wave, his attention should at once be attracted to the pelvis. There is not a functionating organ in the body which is not deranged by the reflex wave when the pelvis is in such condition as not to allow it to escape freely. Let us consider a few of these symptoms in order:

Indigestions are the commonest associations of pelvic mischief, so much so that I long ago made this statement, "Show me ten women with habitually bad stomachs and I will show you nine who have pelvic trouble." It is a rare thing to have a gynecological case of metritis, a tear of any description, who has a really strong digestion. The constipation of these cases is proverbial, but the indigestions even to the extent of nausea and vomiting, are old, old stories to all of you gynecologists. I have had in my experience not less than three cases, diagnosticated by first class general practitioners as ulcers of the stomach, which when properly investigated showed subinvolutions, lacerations and general pelvic disease, all of whose stomachs promptly got well when the pelvic trouble was corrected. Sometimes the indigestion is worse at the crest of the wave, in other cases it is aggravated at the trough of the wave by the necessary anemia of the sympathetic plexi. The only point is to see if the occurrence of the attacks is at any one particular point in the circle, and whenever that is the case one is very much to blame if he does not at once suspect the pelvis being at fault.

Hepatic symptoms are very commonly produced in this same way. In fact, I have seen three or four cases of reputed gall-stones, cured absolutely by righting the condition of the pelvis. Whenever you have a patient, where you cannot find a gross lesion about the gall-bladder or liver, who has these recurrent attacks, that do not go on to jaundice, the pelvis is, by all means, to be examined. I have relieved three patients, in the last few years, of all symptoms of gall-stones, by doing nothing but curetting the uterus or sewing up a tear.

I have seen forms of Bright's disease very much exaggerated at certain points of this wave. I have had two cases of intermittent glycosuria, which were undoubtedly a sequel of menstrual headaches. The sugar would appear about the time the headache was at its worst, would increase until about the time the headache ceased, and then it would take about a week to fully clear up, to be repeated at the next menstrual epoch, but without a trace of sugar in the interval. Both these cases were absolutely cured by bringing on the artificial menopause. This is produced you readily see, by the old theory of pressure in the floor of the fourth ventricle by the reflex wave. While on the kidney I am lead to speak of a reason the general surgeon ought to have this wave at his finger tips, and I hope you gynecologists will listen closely to the report of the following case. I have a patient, sent me from the Northwest, who had her ovaries removed a year ago. On careful examination of her I found the pain started always on the right side, has been there four or five years, recurrent attacks at intervals of four or five days, running up the right side, along the region of the ureter. These attacks would occur at intervals of three or four days to a week. After suffering from them for three years, somebody removed the

ovaries. Since then the attacks have been worse than ever. On examining her a few days ago, I found she not only had a stricture of the urethra but a badly contracted bladder with decided inflammation of the mouth of the ureter, slight amount of pus in the urine with a number of scales from the bladder, pelvis of the kidney and ureter. All that was needed to have avoided this blunder, was simply to watch the attacks with reference to the Stephenson wave. Instead of recurring regularly every twenty-eight days, as they would have done if due to pelvic or ovarian mischief, they recurred in four, five or six days. And this is the one point that I wish this paper to accentuate. Whenever there is pelvic mischief, even though it may be a reflex pain in some other organ, *that pain* returns regularly at some particular point of the menstrual cycle. Many sins against the ovaries would be avoided if this simple little rule were watched by everyone.

Before leaving the urine, one other point, that is now being worked out by a friend of mine, is that the menstrual wave undoubtedly has a great deal to do with the pathological metabolism of the body. Just how much, I cannot state to-day, as the experiments are not yet complete. But enough has been found out to make it certain that it undoubtedly aggravates all of these cases presenting the xanthin compounds.

Its influence on the heart and lungs has been recognized since the beginning of the world. The hysterical heart, the fainting spells, are as old almost as any other knowledge given us by the Egyptians. The dyspneas associated with it and the vicarious menstruations through the lungs are equally well known. Its influence on the thyroid and heart combined, in the Basedow's disease, are things of rather common knowledge. Many cases of Basedow's disease I have been able to modify very materially, and absolutely to cure a few, by correcting pelvic conditions, but I always give the prognosis in proportion to the amount of disturbance caused in one particular part of the wave. It is generally the congestive side of it that does the most harm. I frequently have noticed, in these cases of Basedow's disease, that the pulse is much more rapid, the thyroid more distended, and the ocular stare more exaggerated just before the flow begins. Where you can find a chronic metritis or an old tear associated with these clinical symptoms, you may confidently promise your patient a certain amount of alleviation of symptoms by ridding her of the pelvicmischief.

Loss of voice has been one of the most interesting subjects that I have studied in this connection. One patient I remember told me that she could tell to the minute when her menstruation would come on simply by the power to speak. For years she had been in the habit of losing her voice just at the beginning of the congestive stage. Sometimes she would have to whisper for several months at a time, but generally the control of the vocal cords would return with the first flow. This case had been treated for years by every imaginable kind of specialist, gynecologic, laryngologic, pulmonary, etc. I found one ovary filled with pus and the opposite tube irreparably damaged. It has now been two years since the artificial menopause was brought on and the voice has never been lost since. In a debate we had on this subject, winter before last, the aurists and oculists brought out some very clear cases of tinnitus aurium, deafness, ambliopias, retinal hemorrhages, choked disks, etc., etc., which were simply inexplicable without a thorough knowledge of the menstrual wave. Some of them were caused by the crest and some by the anemic side of the wave. But to this they were undoubtedly due. Vicarious menstruations from the nose are very common, and in conjunction with the rhinologists I have cured a half dozen or so. In every one I found a pelvic lesion, and the outflow was caused simply by the rebound pressure from the hardened tissue at the site of its wonted outlet.

Epilepsies and insanities, mental derangements of every description, which have regular periodic returns, should be studied very, very carefully before any operation is done. My rule is never to touch one of these cases until I have had her under my care three or four months and am satisfied of a regular periodic return of the symptoms at some particular part of the wave. My experience is that it is the crest of the wave that does the mischief. By this careful study I have been able to cure four or five cases. In one, a most marked case, that I had watched for five months and was absolutely certain that the menstrual wave was the cause of the trouble, I found a large, tender ovary associated with a little childish uterus in a well-developed young woman of twenty-five years. When I first saw her the mental aberration would last the menstrual week. In the intervals she would be about as usual. But during the winter of 1893 I found the deranged condition was lengthening out until the attacks were almost merged into each other, so there was scarcely a week of a sane interval and she was rapidly approaching a complete condition of dementia. The operation was done, and, strange

to say, from the moment of awakening from the anesthetic there has never been a return of the old symptoms. In this field, though, you must be the most careful of all. Enough cases have been operated upon now to pretty well test the relationship between pelvic diseases and insanity. By careful statistics from all over the country, particularly from the Toledo Insane Asylum, it has been found that about five per cent. of female lunatics are so from pelvic causes. But we must remember that it is only about five per cent. and that the other ninety-five per cent. are nothing but lesions of the brain itself, and we must not be trapped into removing the ovaries of these people, unless it is to save life. Of course, they may have ovarian cysts, pyosalpinx and the like, and whenever we can find such conditions, they have as good a right to relief as anyone else, but we cannot expect to cure the mental condition of any more than five per cent. of the whole.

There are many other things I would like to speak of, for, in fact, I know no subject which would be more fruitful and bring out more interesting points for a general debate for a whole morning than the complications the menstrual wave produces when it goes awry. Not only the gynecologist but especially the general practitioner should have the laws of this wave at his very finger tips, for there is no one thing that is capable of more widespread and varied mischief. In handling the menopause is the time when we most need this thorough knowledge. But I have already consumed too much of your time, and for my beliefs about it I will have to refer you to the Transactions of your own State Society for February, 1894. And I cannot have a better close for this paper than to repeat what I have said before, regarding the application of Professor Stephenson's theory, that "its benefits to the modern medical man, in the elaboration of these feigned diseases, has been surpassed by nothing in modern days, and equaled in its benefit to our calling only by Harvey's immortal discovery."

THE many friends of Sir William Priestley (who came to the International Medical Congress at Washington, as Dr. Wm. Priestley) will be glad to know that he has been returned to Parliament for a Scotch seat. He is between sixty and seventy years of age, was Sir James Simpson's favorite pupil and after gaining distinction in Edinburgh, went to London in 1850. He married a daughter of Dr. Robt. Chambers, author of "Vestiges of Creation."

Sir William was knighted at the Queen's jubilee, and will probably receive a baronetcy. He is a great nephew of Joseph Priestley, the discoverer of oxygen.

CLINICAL MEMORANDUM.

TRAUMATIC HEMORRHAGE IN THE CENTRUM OVALE BENEATH THE LEFT ANGULAR GYRUS.

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IN the report of this case of aphasia, and in each of those which are to follow, the history of the case, the results of the examination, remarks on the diagnosis and points of surgical interest will be given. A detailed account of the rather elaborate plan pursued in investigating the different forms of aphasia will be stated in full without any apology for the amount of space consumed, as it is believed the interesting features presented by each case will justify the careful study which one of us has endeavored to devote especially to the character of the speech disturbance.

The plan followed in the study of the aphasia, which includes thirty subheadings, will be given but once, and each subheading will subsequently be referred to by number.

After this series of cases of aphasia have been reported the points of interest, in each case will be discussed in a subsequent paper and published in this journal.

CASE I.—*History, Examination, and Diagnosis.*—William D., colored, aged twenty-three years, single, waiter by occupation, was admitted into St. Luke's Hospital, June 16, 1895. The family history is unimportant. He was always in good health up to a short time ago. He has drunk a great deal, but denies syphilis, although he has suffered from gonorrhea a number of times, and has indulged in venery to excess. Early in March, 1895, while in a fight he fell and broke both bones of his right leg just above the ankle. He was taken to the County Hospital, and was under the care of the attending surgeon, Dr. Rogers. After he had been there about two weeks he was attacked by another patient who struck him on the head, just above the right eye, with a chair, and felled to the ground. He was unconscious from the blow only a few hours. After recovering consciousness he suffered from pain in the head and felt dizzy for a week or more, but two weeks later he was able to return to his work. He made no complaint except that when he blew his nose he experienced pain in his right eye. He continued at his work, feeling quiet well, until June 13, 1895. On the morning of that day he complained of headache, but performed his duties as waiter until about 5 P.M., when he was found in the yard, in the rear of the house, lying apparently asleep. When aroused he placed his hand to his head, moaned, said something, but "his words were so confused" that his uncle was not able to understand

him. After a time he was found wandering about the building, and apparently did not know what he was doing. He was taken home and put in bed. He was very restless, seemed dazed, semi-conscious, talked incoherently, refused food, but drank milk and soups when they were offered him. He remained in about this condition during the next three days. He was removed to St. Luke's Hospital on June 16th, at 9 P.M. I saw him an hour later, and found him lying in bed apparently asleep, and when he was undisturbed he did not complain. On arousing him and asking him if he had headache he replied, "Yes," and placed his hand over the entire front of his head, indicating the seat of pain. As well as I could determine from his answers to my questions, the pain was limited to the front of the head, but felt on both sides. He seemed to be semi-conscious, but the blurred consciousness was complicated with a sensory aphasia. He seemed to understand most of what was said to him, but in answering questions he not infrequently used wrong words and apparently did not perceive his mistakes. After he was aroused he was quite restless, moaned considerably, and the forehead was corrugated, indicative of pain.

There was no apparent paresis or paralysis of any muscles of the legs, arms, or face. It was impossible to test accurately the strength of his muscles on account of his inability to concentrate his mind, I could not attract his attention for more than a moment at a time, and as soon as I left him alone he relapsed into a stuporous condition. He registered, however, with the right hand fifty, and with the left forty on the dynamometer, but he only accomplished this on urging him in loud tones to press hard. The tongue was protruded in the median line. Reflexes: knee-jerks were normal; ankle-clonus and plantar reflexes were absent; tendo-Achillis, normal; cremaster and lower abdominal reflexes were absent. Epigastric, R. present; L. absent. Deep reflexes of the arms were about normal. Masseters absent. Sensation seemed to be blunted over the right side, as a pin prick on this side did not attract his attention, or cause him to wince as it did when he was pricked on the left side. On first testing vision he was apparently blinded on the right side of each eye, but this could not be confirmed by subsequent tests, on account of his blunted mental condition. All the internal and external ocular muscles seemed to act normaliy, pupils contracting to light and accommodation readily. Both optic disks were very small, looked pale, and their appearance was suspicious of beginning atrophy; the vessels, especially the arteries, appearing smaller than normal. No exudate could be observed on either disk. I was unable to test the condition of the other special senses on accout of his blunted mental state.

On endeavoring to test the condition of the aphasia I asked him if he could hear the watch, and he said, "That is a beer." I tried him again, and he said, "That is another beer." When I touched him on the right side I asked him if he could feel me, he said, "I cannot hear," meaning that he could not feel. I asked him if he felt me touch him on the left side, and he answered promptly, "Yes, I can see it." On the left side he seemed to distinguish readily between hot and cold substances, but his words were so confused that it was impossible to make out what he said. The whole examination, especially in regard to the special and general sensory phenomena, was very unsatisfactory. The temperature in the right axilla was 99°; left 99.4°; pulse 48, not very full and rather poorly sustained; respiration 17 and regular, When left alone while he was apparently asleep, or in a stuporous condition, sighing respiration would occasionally occur, and he would moan and rub his head as if in pain. During the night he was quite restless and required rather large doses of cannabis indica to secure any rest at all. His temperature was registered in each axilla every three hours during the night, and was found nearly normal or slightly subnormal, and about the same in each axilla. The next morning there was a slight retraction of the head and some rigidity of the posterior cervical muscles. The ears were carefully examined but no discharge or evidence of disease was found. On shaving the head no depression of bone was detected. At noon he registered on the dynamometer R. 132, L. 128. He remained in about the same condition during the entire day, and at 6 P.M. the head seemed to be a little more retracted than it was in the morning. On my endeavoring to bring it forward it evidently gave him pain. The right side of the face, especially around the mouth, was a little paretic; the tongue was protruded in the median line. The deep reflexes were about normal, while the superficial were abolished on the right side and present on the left. On retesting for hemianopsia I was unable to verify my observations of the night before, but there was perceptible blunting of sensation throughout the entire right side. During the following night he rested quietly with twenty minims of the normal liquid of cannabis indica every hour.

From the time that the patient had been admitted into the hospital, on the evening of June 16th, until the morning of the 18th, a careful record of the pulse, respiration, bilateral axillary temperature, and all other symptoms likely to aid in arriving at a diagnosis had been made every three hours. On the evening of his admission, the temperature in the left axilla was about 1° F. above normal, and ½ above normal in the right; the pulse was 48, with fair volume, but easily compressed; respiration was 17, regular, except an occasional sigh, apparently on account of pain. It was thought that the slight elevation of temperature might have been caused by the jolting in removing him from his lodging-house to the hospital. Three hours later, the temperature had fallen .6° in the left axilla, but remained about the same in the right, so that it was a little higher on the right than on the left side. The pulse had risen from 48 to 55, and respiration remained about the same. From 2 A.M. of the 17th to 6 P.M. of that day, the temperature was practically normal and about the same in each axilla; the pulse varied from 48 to 58, and respiration from 16 to 18. Neither the pulse nor respiration changed in character, but the patient was gradually becoming more stuporous. At noon of the 17th, after the head had been carefully shaved and dried, the surface temperature of each side of the head in the frontal and parietal regions were carefully registered

by myself. The thermometers were allowed to remain in position from ten to fifteen minutes, or three minutes after the mercury ceased to rise. Two thermometers were used, and the temperature over corresponding portions of the head was taken at the same time. Lateral frontal. R. 96.5°; L. 97°. Parietal: R. 96.8°; L. 97.2°. Lest there should be some difference in the thermometers, these were now reversed and the temperatures again recorded, with the following results: Lateral frontal: R. 96.4°; L. 97°. Parietal: R. 96.8°; L. 97.2°.

At 6 P.M. of the same evening (June 17) the temperature was: R. axilla 99.2°; L. 98.4°; P. 52; R. 18. At 10 P.M., temp. in R. axilla, 98.5°; L. 98.4°; P. 50; R. 16. He was very restless, and the stupor was apappearently increasing.

At 1 A.M. of the 18th, temp. R. axilla 99.5°; L. 98.5°; P. 52; R. 16. At 4 A.M., temp. R. axilla 96.5°; L. 95.5; P. 52; R. 16. At 7 A.M., temp. R. axilla 96.8°; L. 96.6°; pulse and respiration the same. At 8.30 A.M., temp. R. axilla 98.6°; L. 98.4°; P. 48; R. 18, The patient was in a more stuporous and apathetic condition than at my visit the evening before, and it became evident that unless something surgically could be done for his relief, death would soon result.

The condition of the optic disks had not perceptibly changed since I first saw him; there was no paresis or paralysis of any muscles; the ability to recognize a pin prick throughout the entire right side was almost entirely lost, and response to irritation of the left side, owing to the increasing stupor, was becoming lessened; he could hear and seemed to understand, when aroused, many things that were said to him, but when he attempted to answer even simple questions, which it was difficult to arouse him sufficiently to do; his words, although articulated distinctly, had no meaning as they were jumbled together in a confusing manner.

My first endeavor, before recommending a surgical operation, was to determine, if possible, the character of the brain lesion, and next to locate it.

The head injury, received some three months before, taken in connection with his history for the past five days since the onset of the acute symptoms, indicated that within the brain substance some subacute or chronic process had been going on, and that this had resulted in rather extensive destruction of brain tissue.

Was it abscess, encephalitis, or hemorrhage? The symptoms of injury to the brain of traumatic origin, sufficient to give rise to decided disturbance, came on immediately after the receipt of the trauma; those that result from inflammation are not usually apparent before the second to the fourth day; while those of abscess rarely appear before the second or third week, and may be delayed much longer. Hemorrhage into the brain substance may occur immediately after the head injury, several days, or even months subsequently to it. Delayed or late hemorrhage into the brain substance from traumatism probably only takes place as a result of previous encephalitis and softening. Sudden symptoms of brain lesions may occur in syphilitic subjects weeks or months after an injury to the head, and may be due to thrombosis of a vessel or gumma of the membranes. It is a well-known fact that traumata to the head frequently light up latent syphilis of the brain. Extensive meningeal lesions, especially of syphilitic origin, rarely come on suddenly. They are preceded by violent headache and are attended by a rise of temperature, and frequently by twisting of the facial muscles, or general convulsions. Syphilis affects the large arteries at the base most, and a thrombotic occlusion of a vessel under such circumstances is usually attended by motor aphasia or hemiplegia, or by both.

In the patient whose case is under consideration, the unconsciousness which immediately followed the injury, and lasted only about three hours, could be accounted for on the theory of concussion of the brain from the force of the blow. The symptoms of cerebral disturbance, consisting of slight headache and dizziness, lasting for about two weeks, must have been insignificant, as he did not call the attention of the attending surgeon to them. In the patient's semi-conscious condition, when I saw him, it was impossible to learn whether the headache and dizziness were worse immediately after the receipt of the blow to the head or two or three days subsequently to it. Had these symptoms developed a few days after the injury, they would have pointed to encephalitis. But had a slight encephalitis occurred, this might have been followed by hemorrhage or suppuration.

The head injury attended by an open scalp wound, the slight cerebral disturbance for two weeks, the latent period of nearly three months duration during which he was able to walk, although he did not feel entirely himself, especially in regard to his head, the sudden development of profound brain symptoms, and the vacillating temperature, varying from one degree Fah. above normal to two degrees below, with slow pulse and respiration, certainly pointed very strongly to abscess of the brain. The mental apathy, with power to comprehend for a moment when aroused, but inability to maintain mental concentration for more than a few moments at a time, is found most typically illustrated in abscess of the brain, The patient was a colored man, and the peculiar dusky yellowish hue, so often seen in cases of abscess of the brain, could not have been detected in him had it been present.

The history and many of the symptoms of the case were more in favor of cerebral suppuration than of hemorrhage into the brain substance. There were, however, an absence of certain symptoms that one expects to find present in the terminal period of chronic abscess of the brain. After this stage of chronic abscess of the brain is reached, the temperature begins to rise as the stupor and coma deepen. In this patient, the temperature was nearly two degrees Fah. lower than it had been thirty-six hours before, although stupor was more marked, and a fatal termination seemed to be threatened. With the rise of temperature in the terminal stage of abscess of the brain, the pulse and respiration increase in frequency in proportion to the destruction of brain function.

The behavior of the temperature, pulse, and respiration, with the increasing stupor in this patient, made me doubt

the existence of an abscess, and suspect an encephalitis that had resulted in softening, If this condition existed, I reasoned that hemorrhage occurred into the focus of softening on the 13th, the time when the acute symptoms suddenly developed, and that there had been a recurrence of the hemorrhage on the morning of the 18th.

I confessed myself at the time unable to make more than a problematical diagnosis. I was inclined to regard the case as one of encephalitis with subsequent hemorrhage, although, as I told Dr. Rogers just before the operation, I would not be surprised to find an abscess. Had the patient's condition warranted delay in a surgical procedure, it is probable that a positive diagnosis could have been made.

The second problem to determine was in relation to the location of the lesion. This was not as difficult as at first it might seem. The patient was known to be right-handed, therefore the faculty of speech would naturally be located on the left side of the brain. There was a condition of sensory aphasia, without disturbance of motility, hearing, or motor speech, therefore the lesions must be on the left side and posterior to the temporal convolutions. Although his mental condition was such as to make it impossible to determine the exact character of the speech defect, the visual fields, or other symptoms, it was quite evident that the lesion was in the region of the angular gyrus or posterior to it. The anesthesia throughout the entire right side, without hemiplegia, but with sensory aphasia, seemed to point quite definitely to the lesion being an extensive one in the centrum ovale of the parieto-occipital region, in such a position as to involve the fibers from the angular gyrus, the inferior parietal lobule, and probably those from the occipital lobe also.

Dr. E. J. A. Rogers, under whose care the patient had been while in the Arapahoe County Hospital, was requested to see the patient with me. On carefully studying the symptoms together, surgical means seemed to offer the only hope of relief. As the patient's condition was desperate and becoming hourly worse, he decided to operate at once, and in this opinion I concurred.

The operation was begun at 10.30 A.M. on June 18th, chloroform being the anesthetic used. The pulse before beginning the operation was 48; upon opening the skull it increased to 70, and upon the completion of the operation was 96.

The skull was opened by a ¾-inch trephine at a point about 2½ inches backward and upward from the external meatus,[1] and then enlarged by a rongeur-forceps. Pulsation was absent in the exposed area, but the dura bulged and showed great tension from internal pressure. The dura was divided and the brain explored by a canula, first forward and then inward without result. Upon exploring backward into the anterior portion of the occipital lobe, a mass of old clotted blood was found with a definite capsular limit. This area was washed out and quite a quantity of *debris* removed. No pus or other indication of inflammation was discovered. The wound was closed without drainage. Upon warming the patient in bed the pulse immediately began to fall and steadily continued to do so, the patient remaining in a profound coma and symptoms indicating pressure becoming more and more marked.

On the day following the condition continued growing worse, At 5 P.M. the temperature in the left axilla was 99.2°; the right 98.8; pulse varied from 44 to 48, and respiration was irregular and sighing from 8 to 12 per minute.

The condition of the patient seemed so hopeless that we deemed it best to again explore and try to relieve him. At 8 P.M. the sutures were removed and the cranial opening much enlarged downward and backward, and a sharp trochar with canula was then forced through the tentorium cerebelli, and the posterior fossa explored without result. The area discovered yesterday being now thoroughly uncovered was freely laid open and washed out and a much larger quantity of clots and *debris* removed. Drainage was left and the wound dressed. The patient again sank into the same state as before, but improvement was constant and regular from this time on, the results showing, I believe without question, that his sufferings were due to pressure produced in the area relieved.

After the second operation the pulse rose from 44 to 96; respiration from 12 to 22; the temperature remained nearly normal for about twelve hours. After this, the temperature rose from 1° to 1.5° above normal, then it dropped to normal a few hours later. The pulse varied from 92 to 98 for about thirty-six hours after the second operation, when it fell to 66 or 70 while he was asleep, and varied from 78 to 84 during his waking hours, the most of which time he was restless. Respiration did not fall below 17 or rise above 24 after the second operation. While no apparent shock followed the first operation, he seemed to be very weak after the second, and it was a surprise to Dr. Rogers, the resident physicians, and myself to find him alive the morning of June 20th. From June 19th to the 24th the record is uneventful. During this time he took considerable liquid nourishment, appeared profoundly unconscious, and was quite noisy, especially during the night when he would frequently yell at the top of his voice. He was given twenty minims of the normal liquid of cannabis indica every hour while he was noisy, usually with the effect to quiet him and make him sleep, after the second or third dose.

On the 24th, his pulse was observed to be 52 when he was asleep, but it arose to 75 on his awaking and becoming restless. It was noted that a pin-prick on the right side caused him to wince. From 1 A.M. to 6 A.M. of June 25th, he was very noisy and moaned continually, and at 7 A.M. the pulse registered only 42, the lowest it had been since the second operation. There were no other indications of increased cerebral pressure. After a free bowel movement the pulse registered 72 and he was partially conscious.

During the next two weeks he improved steadily, and by the end of this time he was quite rational and able to sit up an hour or two each day.

Examination July 7, 1895: There is no paresis or

[1] Dr. Rogers gets at this in a roundabout way. By actual measurement the point was 1½ inches above the external auditory meatus and the same distance posterior to it.

paralysis of any muscles. Dyn. R. 104; L. 130. Deep reflexes are nearly normal and about the same on each side of the body. The superficial reflexes are lessened on the right side, but normal on the left. Temperature and pain sensations apparently about equal on each side; tactile slightly lessened on the right; posture and pressure still more impaired, and muscular and localization sensations lessened to the greatest extent on the right side. Smell: He can detect an odor with either nostril, but does not seem able to name it. Hearing: Watch, R. ⅓; L. ⅔. Impossible to test him with the tuning fork as he becomes confused. Eyes: Central vision apparently nearly normal; the external ocular muscles act well, and pupils respond to light and accommodation. Right bilateral homonymous hemianopsia apparently complete. No Wernicke pupillary phenomenon. Sensory aphasia is quite well marked, but he is fatigued and the examination has to be postponed.

On July 8th, I examined into his condition of aphasia. The plan that I am in the habit of using in examining these cases is elaborated from the one suggested by Dr. M. Allen Starr.[1]

1. The power to recognize objects seen, heard, felt, tasted, smelt, and their uses.

2. The power to recall the spoken names of objects seen, heard, felt, tasted, and smelt.

3. The power to understand sounds other than speech.

4. The power to understand speech and music.

5. The power to call to mind objects named and point them out at request.

6. If word-deaf, can he recognize his own name when it is spoken?

7. The power to recognize a word spelled aloud.

8. The power to call up mentally the sound of a note, figure, letter, or word.

The examination thus far will test the various sensory areas, but more especially the auditory and the association tracts between the different sensory areas connected with speech.

9. The power to recognize letters, figures, notes, and colors seen.

10. The power to understand printed and written words seen.

11. The power to read printing, writing, and music aloud and inaudibly, and to understand what he reads.

12. The power to recall objects, the names of which are seen.

13. The power to write voluntarily.

14. The power to write at dictation.

15. The power to copy, and the manner of copying, printing, and writing.

16. The power to write the name of objects seen, heard, felt, tasted, and smelt.

17. The power to read aloud and inaudibly, and to understand what has been written.

18. The power to write his name and the ability to read it when written by himself and by another person, or when it is printed.

19. The power to recognize a letter by tracing it with the index finger or with a pencil, the movements being guided by another.

20. The power to call up mentally the appearance of an object, a figure, note, letter, or word, when word-blind.

These additional tests will aid in determining the condition of the visual word-memories in the angular gyrus, and the connection between this area and the surrounding sensory and motor areas:

21. The power to speak voluntarily, and, if impaired or lost, the character of the defect.

22. The power to repeat words after another.

23. Does the patient recognize his mistakes in speaking and writing, and can he correct them?

24. Can the patient think in speech (propositionize)?

25. Is there any special difficulty in the use of nouns, verbs, or other parts of speech?

26. The power to understand pantomime or gesture expression.

27. The power to employ intelligently gesture in expression.

28. The power to read figures and to calculate.

29. The power to count both money and in numbers.

30. The power to play a game of cards or other games.

In testing his ability to recognize objects seen, it was found that he could recognize only a few, and those were of the most familiar character, such as a pencil, book, or knife. If these objects were presented to him in rapid succession, he would become confused. At times he would recognize a watch, and at other times he would not. By the senses of hearing, tasting, and smelling, his ability to recognize was about as good as it was with vision. By the sense of touch he was unable to recognize a single object with the right hand, He could recognize a few objects by feeling them slowly and carefully with the left hand, but the process was slow and much below the normal. For all those objects that were recognized by him he had no difficulty in telling their use, but, as we should expect, he had no idea of the use of unrecognized objects.

Apraxia is a term employed to express the loss of memory for the use of things. It has been used to denote, more especially, the loss of visual memories, as soul blindness, object blindness, etc., but it is equally expressive when used to denote the loss of any of the other special sense memories.

The patient then was suffering from partial apraxia for memories of all the special senses except tactile, but for those of this sense the apraxia was complete on the right side and partial on the left.

In testing his power to recall the spoken names of objects seen, heard, felt, tasted, and smelt, the defect in this appeared to be similar to that found in testing his ability to recognize objects. With all senses, except tactile, he could recall the names only of the most familiar objects, but with tactile sense he seemed to gain no definite idea of an object with the right hand, and but little with the left.

He understood speech and sounds other than speech perfectly.

[1] *Medical Record*, October 2, 1888, p. 497, and *Brain*, vol. xii, 1889, p. 95.

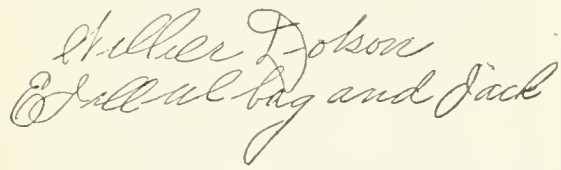
He had never known anything of music.

He experienced little difficulty in calling to mind objects named, and pointed them out when requested.

On carefully testing for auditory speech defects none were found,

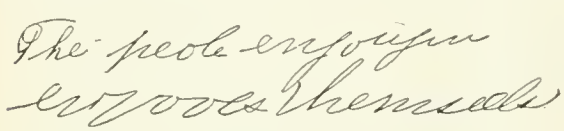
On testing for 9, 10, 11, 12, of the plan followed in examining an aphasic, he made a complete failure.

On testing for 13, the power to write voluntarily, he wrote

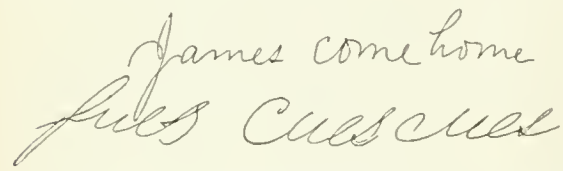


Meaning to write William Dotson (his name), but the other has no meaning.

On dictating for him to write "The people enjoyed themselves," he wrote

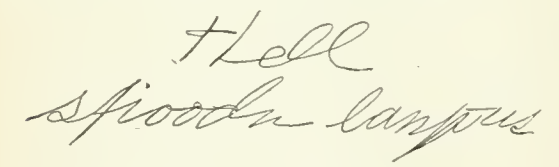


I wrote and requested him to copy, "James, come home," and he wrote



Unfortunately I failed to test his ability to copy printing.

After he had learned to recognize and name "bell," "spoon," and "lamp," he was asked to write their names, and No. 4 is the result, in the order given below.



17 was a failure, except for efforts under 18.

Under 18 he wrote (No. 1), getting the last part of his name correct, but "William" is wrong, although the first five letters are correct. He was able to read his name immediately after writing it, but the next day he failed to decipher it. He could not read his name when it was written by another person nor when it was printed.

19. Occasionally he could recognize a letter which his index finger was made to trace.

20. He could mentaliy call up the appearance of some objects, most figures and letters, and a number of words. He knew no notes.

The answers to 21 and 22 were perfect. 23. He made no mistakes in speaking. He seemed to recognize his mistakes in writing, at least, some of them, but he was powerless to correct them, and usually made a greater error when he attempted to improve his writing.

The answers to 24, 25, 26, and 27 were perfect.

28. He could read a few figures and add anything below ten, but nothing above this, neither could he subtract or divide. Before his injury he had no difficulty in subtracting or dividing.

29. He could count mentally from one to any number, but he could not money.

30. He could not play a game of cards.

The next day, July 9th, the patient went to the telephone, called for a number, and when the party answered and asked his name, he was unable to give it. He turned to the nurse, who was standing near and said, "Who am I? What's my name?"

On July 12th, the condition of apraxia proper, had entirely passed away. He had no difficulty in recognizing an object and its use, but often failed to name the most familiar objects, even after the name of the object had been given him only a few moments before. On showing him an object and calling it by various names, he made no mistake in recognizing its name when it was spoken. He was at that time suffering from a condition of verbal amnesia.

July 13th, he was asked to write to twenty. He wrote the numerals from 1 to 10, inclusive, in their regular order, omitting 11 and 12, wrote from 13 to 19 correctly, but on beginning a new line he started at 12 and wrote to 16, omitted 17, then began at 18 and wrote to 21 correctly. After writing the above figures he said that he knew what they were, but could not recall the names of them. On questioning him I found that he could give the names of a few numbers that he had just written. July 14th, he went out in the morning for a walk without permission, was in the sun for an hour, returned looking exhausted. I happened to be in the hospital about the time that he returned from his walk, and on testing his ability to name things, he showed almost complete amnesia for the name of everything, no matter how familiar it was. He manifested nearly as greatly a degree of apraxia as was detected on July 8th.

He was ordered to bed and the nurse was requested to see that he did not leave his ward again without permission. During the remainder of the day he was physically and mentally exhausted, and suffered some from headache, or a dull heavy feeling in his head. He slept well during the night. July 15th, 9.30 A.M.; temperature, axillary, R., 98.2°; L., 98° F.; P., 62; R., 18. Suffering from severe pain in the head, especially in region of the operation. 9.30 A.M., felt miserable and vomited. 10 A.M., vomited again, headache agonizing. At 11.20 A.M., vomited the third time. Temperature, axillary, R., 101.6°; L., 101.8° F.; P., 70; R., 26. Bowels were freely opened with calomel. Slept one hour. 1.30 P.M., vomited again. During the remainder of the day he vomited every hour or two; headache was severe, and he was delirious much of the time; an ice poultice was kept constantly applied to the head, and he was given full doses of cannabis indica for the relief of pain. At 5 P.M. Temperature, axillary, R., 101.2°; L., 100.8° F.;

P., 70; R., 26. His head was dressed, and as there was considerable prominence at the site of the operation, the wound was reopened, and a small quantity of liquid blood was let out. At 12.30 A.M. of the 16th, he was still vomiting, delirious, and suffering from head pain. Temperature, axillary, R., 101.6°; L., 101.2° F.; P., 72; R., 28. During the 14th and 15th his urine had to be drawn. At 8.20 A.M. his temperature, pulse, and respiration were about normal, but he was suffering greatly from headache. During the afternoon the post-cervical muscles were quite stiff, and on my attempting to bring his head forward it gave him considerable pain. On the morning of July 17th he seemed as well as he had been before the relapse, except a slight depression.

July 18th he was asked to write a dictation, "All the boys are laughing at me." He wrote, "All boys are faom at me," forming all his letters perfectly. On attempting to write a dictation, "All the girls are laughing at me," he wrote, "All girls are laon at me mel lell wnel attle," still forming his letters perfectly. He could not read a word that he had written.

On the morning of July 20th I requested him to write me in the afternoon how he had been during the day. He spent about an hour in writing, "Dr. Eeley Ia fell in nuy go to dad from "H. DOTSON.
"W."

He could not read a word of what he had written, but said he had intended to write and thought he had written. "Dr. Eskridge, I have been feeling very well to-day. From W. H. Dotson."

On July 23d, his letter was equally illegible, but his own name, Wm. H. Dotson, and his address, Edmond, Kan., were written distinctly. He could read his own name and address, but scarcely another word of his letter.

On July 24th, he wrote my name, his own, and his address perfectly, could read them, and was able to read a few words of his letter besides. It was evident that he recognized his mistakes. He spelt "gioel," scratched it, and wrote "girl." Some sentences were written correctly, *e.g.*, "My girl was to see me." For "but I see that I cannot write correctly," he wrote, "but I seet I aanot were krat." In closing his letter he tried to write, "I hope you will excuse poor writing," he wrote, "I lop you nul esast pool writ," and then signed his name and address in a bold, good hand, every letter well formed, and every word correctly spelled.

Third examination July 24, 1895.

Motility, reflexes, general sensation, and all the special senses, except sight, normal. Sensation was perfect on the right side as it was on the left. The pupils reacted well to light and accommodation, and no changes were noted on examination with the ophthalmoscope. Central vision good, but a little better in the right eye than in the left. The difference in acuity of vision of the two eyes was thought to be accounted for by uncorrected refraction error. Fields: R. of each eye narrowed and amblyopic for objects; L. normal. The condition of complete hemianopsia had passed away. There was no apraxia and he had no difficulty in recalling the names of objects. On testing according to the plan pursued in the examination, from 1 to 8 inclusive, were answered perfectly. From 8 to 20 inclusive, showed a number of mistakes, but they were much less numerous and slighter in degree than on July 8, and he now recognized his mistakes and could often correct many of them by a little effort. Scarcely a letter was written that did not contain an apology for his mistakes. The answers from 21 to 30 inclusive, were perfect.

He continued to improve daily, wrote much better, but still had some difficulty in reading both writing and printing until nearly the last of August.

On the 27th of August Dr. Edward Jackson kindly examined the patient's eyes, and reported as follows:

"The ocular movements and eye grounds are normal. Both eyes present considerable irregular astigmatism, yet with correcting lenses: R. +0.50 cyl. axis 90°, vision = 4/4; L. +0.37 spherical, vision = 4/4 nearly.

"Taken with the hand the fields of vision are: R. normal; L. not positively diminished, but the periphery of the field is noticeably amblyopic as compared with the right, or with the normal of a healthy person."

It will be observed that neither Dr. Jackson nor I detected any "crossed amblyopia," but Dr. Jackson found the left eye slightly amblyopic in the peripheral fields.

MEDICAL PROGRESS.

Idiopathic Fibrinous Bronchitis. — As the result of a clinica study SOKOLOWSKI (*Deutsches Archiv für klinische Medicin*, 1896, B. lvi, H. 5, 6, p. 476) expresses the conclusion that acute fibrinous bronchitis is a disease conforming to the type of a pure infectious process, and of which possibly the staphylococcus aureus and albus act as causes. Typical acute cases are probably uncommon; milder cases are more common, but are frequently overlooked and confounded with bronchial asthma, with which they have a certain clinical relationship. So-called chronic fibrinous bronchitis is an obscure morbid process probably of quite different etiology than the acute disease, with which it has in common only the fibrinous casts of the bronchial tubes, which may occur also in connection with tuberculosis, diseases of the heart, etc. Pulmonary tuberculosis appears to play a very subordinate rôle in the etiology of chronic fibrinous bronchitis.

The Toxicity of the Urine of Epileptics.—As the result of an experimental inquiry MAIRET and BOSC (*Archives de Physiologie*. April, 1896, No. 2, p. 428) have determined that the urine of epileptics possesses in general a low degree of toxicity, which is manifest only after attacks and in the intervals between them. That of urine passed in advance of the paroxysm corresponds with that of normal urine. The increased toxicity observed in the preparoxysmal period is most marked immediately in advance of the attack. The hypotoxicity appears immediately after the attack and is most pronounced in the succeeding hours. The toxicity of epileptic urine, in its action upon all functions except those of the nervous system, corresponds in quality also with that of normal urine. Upon the nervous

system, however, epileptic urine—and especially that of the preparoxysmal period—has more intense convulsive action.

The Influence of Massage upon Absorption through the Veins and Lymphatics. — Kellgren and Colombo (*Archives de Physiologie*, April, 1896, No. 2, p. 462) have determined, by means of an investigation conducted in the laboratories of the Royal College of Physicians of London, and of the Royal College of Surgeons of England, that massage has always a certain and active effect in augmenting the rapidity of absorption of substances injected into tissues and organs susceptible of manipulation. It is inferred that the effect would be the same upon pathologic exudates. The course followed in the process of absorption by the substances injected is through the adjacent lymphatics and the related glands. The absorption of substances injected into the peritoneal cavity takes place not only through the abdominal, but also through the thoracic lymphatics and glands. Petrissage proved more efficient in the absorption of substances injected beneath the skin and into the muscles and joints; and deep effleurage in the absorption of substances injected into the peritoneal cavity. It is believed that the veins also play an important rôle in the absorption of injected substances, and that they are especially active under the influence of massage.

Subacute Anterior Poliomyelitis with Paralysis of the Diaphragm in an Adult. — Grawitz (*Berliner klinische Wochenschrift*, 1896, No. 12, p. 245) has reported the case of a woman, eighteen years old, engaged in knitting bright-colored wool by machinery, who, after several days of general malaise, while nursing her seven-months old infant, complained of severe pain in the head and neck, with difficult movement of the neck and spine. It was not known whether fever was present or not. At the end of three days these symptoms disappeared, and at this time paralysis of the right arm was observed. On the following day the left leg was dragged in walking, and two days later the right leg and left arm also were paretic. Sensibility was in no wise disturbed. Breathing was not interfered with, but on deep inspiration a depression appeared below the ensiform cartilage, and the costal arch was drawn upward. The liver failed to descend in inspiration, but was rather drawn upward. In attempting to bear down, the patient used the abdominal muscles, but not the diaphragm. This latter muscle responded but feebly to strong faradic currents and not at all to the galvanic. The reflexes were very widely abolished. The muscles of the paralyzed parts generally were wasted, and yielded reactions of degeneration. The case is looked upon as one of subacute anterior poliomyelitis in a woman predisposed by protracted lactation at an early period of life, in conjunction with hard work, and exposed to possible intoxication through the handling of bright-colored wools.

THERAPEUTIC NOTES.

Treatment of Alcoholic Cirrhosis of the Liver.—While the lines of treatment to be pursued in cases of alcoholic cirrhosis of the liver are pretty much the same whether the viscus is enlarged or diminished in size the prognosis is much less favorable under the latter than under the former condition. The diet should consist essentially of milk, not less than three quarts being given in the course of the day in divided amounts. Alkaline waters in moderate quantity may be permitted. If the milk is badly digested to each glassful may be added a tablespoonful of the following solution:

℞ Calcium chlorid, . . . 15 grains
Water, ... 3 ounces

Or, with each glass of milk a tablet of the following composition should be taken:

℞ Pancreatin, Pepsin, Sodium bicarbonate, aa . . 3 grains

When the ascites has disappeared and the digestive functions are improved, in the course of from six weeks to four or five months the severity of the regimen may be mitigated, and white meats, green vegetables, and a small amount of farinaceous food permitted, while alcohol in any form, red meat, fat fish, and condiments are to be withheld. When possible, the milk-cure may be conjoined with the raisin-cure. Medicinally potassium iodid may be given in doses of from 7½ to 30 grains, if necessary, for a period of several months. This drug is especially useful if the liver is fatty. When the disease is advanced iodism is to be guarded against, as this condition is attended with an increased probability of hemorrhage. If the enlarged liver is painful, and congestive exacerbations occur, calomel is to be administered—either gr. $\frac{1}{6}$ or gr. $\frac{1}{3}$ every morning for several months, or beginnning with gr. $\frac{3}{4}$ four times the first day, administering gr. $\frac{1}{5}$ four times a day for six days, then intermitting for fifteen days and then resuming as before. Meanwhile, the mouth is to be carefully watched for signs of mercurialism. Local revulsion meets the same indications as calomel. Vesication is to be avoided, as the kidneys are rarely healthy. As a diuretic calomel may be employed in doses of from gr. jss to gr. iij four times a day. A combination of squill, potassium nitrate, and potassium acetate may also be employed, or lithium carbonate with potassium nitrate, or a combination of the powder and the extract of squill. As a purgative, gamboge may be employed, or euonymin with extract of hyoscyamus, or a combination of magnesia with flowers of sulphur. When in spite of diet, diuretics, and purgatives the ascites does not diminish or occasions dyspnea the fluid must be evacuated by puncture, repeated if need be.—*Gaz. Hebd. de Méd. et de Chirurgie*, 1896, No. 28, p. 335.

The Treatment of Diphtheria with Antitoxin.—Blumenfeld (*Wiener klinische Wochenschrift*, 1896, No. 13, p. 223) reports 229 cases of diphtheria treated with the antitoxin in country practice by different physicians with 20 deaths—a mortality of 8.7 per cent. Sixty of the cases were of the severest character and attended with involvement of the larynx. About a third of the cases were of mild type. Of 48 cases, treated during the same period without the antitoxin, 11 terminated fatally—a mortality of 23 per cent. The use of the antitoxin was throughout unattended with unpleasant results.

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SATURDAY, JUNE 6, 1896.

THE AMERICAN GYNECOLOGICAL SOCIETY.

The American Gynecological Society has reached years of maturity, and at its annual meeting in New York last week, it celebrated its twenty-first anniversary.

The meeting will be remembered for its many interesting features, among which may be mentioned the presence of the famous Parisian surgeon, Dr. Paul Ségond. Not only was everyone charmed with the genial bearing of the visitor, but all were favored with the rare opportunity of seeing him demonstrate, in a variety of cases, his method of operating. As one of the leading advocates of the vaginal route of attack for suppurative disease in the female pelvis, and of the removal of fibroid tumors of the uterus by morcellation, his coming was especially welcome as furnishing the chance for witnessing a demonstration of his procedure. His maxim, in operating, is "See what you cut, and cut what you see." He is extremely methodical and systematic. The distinguishing feature of his method in operating for pus is, that he bisects the uterus anteroposteriorly after clamping the uterine arteries, and drags down the appendages, removing them still attached to either half of the uterus. His operation is peculiarly free from hemorrhage, and exposes itself to only one criticism, which, however, is somewhat questionable, and that is, the desirability of opening the septic uterine cavity as he does, between the very lips of his wound. His method of drawing down a fundus uteri by stepping his forceps one after the other along the tissue, was particularly neat.

Although an ardent advocate of this method of procedure, he not only recognized the limitations of it, in its application to fibroid tumors, but steadily adhered to that principle in the presence of five large fibroid tumors of the uterus, which had been held in waiting for him, and which he absolutely refused to attack by that route, on account of their size.

The scientific work of the meeting showed a decided trend toward conservatism. The preservation of organs formerly sacrificed on slight provocation, was emphasized by the tone of more than one paper. The most striking illustration of this, perhaps, was the paper of Dr. Howard Kelly, in which he advocated attacking an ectopic gestation sac through the vagina and simply draining its contents, without interfering radically with the organs themselves. While advocating conservatism as regards the organs already in the field of gynecology, a commendable spirit was shown in extending this field to cover diseases of the ureter, the vermiform appendix, and the kidney.

The Society was increased by the admission of four new members, but the determination to maintain its high standard of qualification is shown in the fact that three applicants were rejected.

The social features of the meeting were as full of interest and enjoyment as the facilities of the metropolis could furnish, and were highly appreciated by the visiting members.

The Society, by unanimous vote, approved of the memorial to Congress in opposition to the anti-vivisection bill now pending.

THE PATHOLOGICAL INSTITUTE OF THE NEW YORK STATE HOSPITALS.

From a recent address by the newly appointed director of the Pathological Institute of the State Hospitals, Dr. Ira Van Gieson, we learn of the

scope and plan of what promises to be one of the best equipped laboratories in this country. Five thousand square feet of floor space have been secured in the Metropolitan Building, Madison Square East, New York City, and this is now being apportioned into a large general laboratory and demonstration-room, rooms for cell work, for chemistry and physiology, and for hematology, together with a library, director's room, photographic-room, etc.

Although the chief aim of the Institute is to study the physical basis of insanity, it is apparent that the director intends to do this along the lines which have contributed so materially to our knowledge of neurology and general pathology; that is, by investigation of the comparative anatomy and biology of the nervous system, of the physiology, cytology, and cytological chemistry of the nerve-cell, and of bacteriology, especially in its relation to the production of toxemias of the nervous system, as well as by investigations applied directly to reveal the somatic accompaniments of insanity. With this end in view, it is proposed to have among the five permanent associates of the director one who has had special training in hematology, another in biology and embryology of the nervous system, another in physiological chemistry, another in bacteriology, and finally one who is adapted to conduct and plan out work in experimental toxemias and intoxications of the nervous system. Thus the plan of conduct of the work is a broad and liberal one, and insomuch as the problems of mental pathology will be approached in the light of the inferences drawn from all of the subdepartments of neurology and pathology, the output of the laboratory cannot help but materially advance the comprehensiveness of neurology. Moreover, if it fulfills its promise, and if the medical officers of the various State asylums embrace the opportunity which is here given to them to carefully study their obscure and unintelligible cases, the stigma of inactivity and non-productiveness which has been attributed to those who have the care of the insane will be no longer merited. The directors are not unmindful, apparently, that such a venture as the pathological institute, in order to be a success commensurate with the expenditure of such a large amount of money, must needs be in closest touch with the general medical profession and directly conducive to their advantage. With this end in view, it is proposed to furnish opportunity, after the needs of the asylum physicians of the State have been satisfied, for members of the profession to endeavor to interpret whatever vagaries of disease to which they may wish to direct their scientific inquiries, while their labor will be facilitated, and interpretation suggested by those specially skilled in individual departments.

The State Commission in Lunacy has shown commendable perspicacity and wisdom in the selection of New York City as the location for such a laboratory. The advantages to be derived from such location, contrasted with those in any other part of the State, are so apparent as not to need mention. The consolidation act, which has recently made the Greater New York one of the first cities in the world in population, has at the same time enhanced its claims to the distinction of being the chief center of advanced medical and scientific thought on this side of the Atlantic. It stands to reason that a city which supports two great universities, with their modern and aggressive medical departments, as well as four prosperous and mature medical colleges, not to speak of two thriving and progressive post-graduate medical schools, should attract and keep within its confines the most enlightened savants of the age. Where they do their work, there is the center of scientific advance; where they are gathered, therefrom spreads the cosmos of scientific activity. Institutions that aspire to contribute to material science must keep in touch with the great universities and the minds which are gathered within their shades, and must be situated in the centers of medical learning. In these directions it would seem that the Pathological Institute of the New York Hospitals has started right.

ECHOES AND NEWS.

Dr. Daniel Lewis of New York City, has been re-elected president of the New York State Board of Health.

Dr. Gowers of London has been elected a foreign correspondent by the Medical and Surgical Society of Bologna.

The German Ophthalmological Society will hold its next meeting at Heidelberg, August 5th.

IT is rumored that Sir William MacCormac will probably be elected the next president of the Royal College of Surgeons of England, to succeed Mr. Christopher Heath.

UNDER the will of the late Surgeon-general Edward Jacob Forster, his medical library will be donated to the Boston Medical Library.

THE STATE BOARD OF HEALTH OF MASSACHUSETTS has announced that it is now prepared to undertake the bacterial diagnosis of diphtheria, sending out the necessary tubes and reporting back the results to those who send to it cultures for examination. Examination of suspected tuberculous sputum will also be made on request.

ANOTHER victim of "Christian Science" is reported from Booneville, a village near Utica, N. Y. Two weeks ago Mrs. A. gave birth to a daughter. She was treated by Christian Scientists and no physician was called in. Yesterday she died. This is the second case of this kind in Booneville.

DR. THOMAS DUN ENGLISH, of Newark, N. J., the author of "Ben Bolt," graduated from the Medical Department of the University of Pennsylvania in 1840, and now, as an octogenarian, will probably attend the approaching commencement exercises of his alma mater.

THE OHIO STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION is making a creditable record for faithful and energetic discharge of its duties. It already has before it the vexed question of how far the optician should be permitted to go in fitting glasses as well as other problems of less importance. The matter of recognizing the diplomas, issued by certain colleges within that State, will cause a careful investigation of their methods and general standing as scientific institutions.

IF the press reports are altogether reliable, a system of baby-farming is pursued with great audacity and upon an extensive scale within or near New York City. During the past month one or more waifs have been daily taken to Bellevue by the police. An examination of these has led the authorities there to conclude that many of them come from the same source, but as it is difficult to determine to which department of our municipal government belongs the duty of looking into this species of crime against the innocent, the practice flourishes.

ACCORDING to calculations made from the experience of American railroads for the past twelve years, only one passenger is killed out of every 1,985,153 carried, and only one is injured for every 183,822. A person would have to travel over four million miles before it would come his natural turn to be hurt, or over forty-seven million before he should expect a fatal accident. In other words, a man, unless removed by intercurrent disease, may certainly expect death from accident after 181 years of continuous travel by rail.

THE medical college heretofore known as the Medical Department of the University of Wooster, located at Cleveland, O., has just completed a union with the Ohio Wesleyan University of Delaware, O., becoming the medical department of the latter institution, and will be known in the future as the Cleveland College of Physicians and Surgeons. A very valuable lot, 80 x 120 ft. in size, has been donated to the University upon condition that a medical college building be erected and equipped for laboratory teaching by October, 1897. The building is to cost not less than $50,000, and funds for its erection have already been pledged. The new Cleveland General Hospital is under the exclusive control of the new college for clinical purposes, and with the improved facilities for laboratory teaching afforded by the urgently needed new building, the school will be very fortunately situated for medical teaching. Dr. Charles B. Parker has been elected Dean of the medical school, and Dr. H. W. Rogers has been re-elected Secretary.

THE authorities in India have forbidden the use, by the natives, of the water bottle made of skin for transporting drinking water, and have supplied metal buckets instead. They also require all water to be boiled before being drunk. These precautions are instituted to prevent a return of the virulent epidemic of cholera that prevailed last year.

From *Science* we learn that during the recent session of the National Academy of Sciences a report was prepared with reference to the proposed legislation interfering with the practice of vivisection in the District of Columbia. The report states that physiology must be studied by experimental methods. The physiologist, no less than the physicist and the chemist, can expect the advancement of his science only as the result of carefully planned laboratory work. If this work is interfered with, medical science will continue to advance by means of experiment, for no legislation can affect the position of physiology as an experimental science. But there will be this important difference: The experimenters will be medical practitioners and the victims human beings. That animals must suffer and die for the benefit of mankind is a law of nature, from which we cannot escape if we would. But the suffering, incidental to biological investigations, is trifling in amount and far less than that which is associated with most other uses which man makes of the lower animals for purposes of business or pleasure. The men engaged in the study of physiology are actuated by motives no less humane than those which guide the persons who desire to restrict their action, while of the value of any given experiment and the amount of suffering which it involves they are, owing to their special training, much better able to judge. When the men to whom the government has intrusted the care of its higher institutions of research shall show themselves incapable of administering them in the interest of science and humanity, then, and not till then, will it be necessary to invoke the authority of the national legislature.

THE OHIO STATE MEDICAL SOCIETY at its recent meeting in Columbus elected the following officers for the ensuing year:

President, Dr. F. C. Larimore, Mt. Vernon, O. Vice presidents: first, Dr. M. Stamm, Fremont, O.; second,

Dr. C. F. Clark, Columbus, O.; third, Dr. John S. Beck, Dayton, O.; fourth, Dr. Geo. W. Crile, Cleveland, O. Secretary, Dr. Thomas Hubbard, 205 Ontario street, Toledo, O. Assistant Secretary, Dr. H. M. W. Moore, Columbus, O. Treasurer, Dr. James A. Duncan, Toledo, O. Next place of meeting, Cleveland, O., third Wednesday in May, 1897.

The Brooklyn Department of Health has recently issued a circular showing that the laboratory for the production of serum is now able to provide serum that contains 200 units per cubic centimeter, or 2000 units per vial, which is just twice the strength of that heretofore issued. This new issue is known as Grade No. 1. Serum of a still higher grade, 2000–3000 units to the vial, will be issued in smaller quantities under a blue label, and is intended for use in severe cases only. The white label serum will be known as Grade No. 1, the blue as Grade No. 2. The average curative dose of diphtheria antitoxin is about 1000 units, but in severe cases or when the serum is not used until late in the disease, a larger dose, 1500 to 2000 units, is required.

The new serum will be furnished without charge to hospitals, dispensaries, and physicians if application therefor is made at the office of the Department of Health. In order that reliable statistics may be obtained, physicians who use the antitoxin issued by this Department are requested to fill out the form accompanying each vial and to forward the same to the chief of the laboratory. "Physicians who fail to make these returns will be unable to obtain further gratuitous supplies of antitoxin." This last quoted proviso has, in the judgment of the Commissioner of Health, been for the first time rendered necessary, upon any of his circulars of this nature, by the remissness of practitioners, who, having received the remedy free of cost, have not complied with a request for returns of results.

The following paragraph from the *Medical Press and Circular* for May 20th, refers to a subject interesting to all American surgeons, namely, a full and generous recognition of the great work of the great surgeon Lister. The author of the new biography of Lister is by Dr. Hermann Tillmanns of Leipzig, who, we believe, is at the present time one of the editors of the *Centralblatt für Chirurgie:* "Sir Joseph Lister, as already announced, is the President of the British Association this year, and, doubtless, partly in consequence of this, our contemporary, *Nature*, has published in its columns a sympathetic biographical account of the great surgeon, contributed by Professor H. Tillmanns. In addition, an excellent photogravure of Sir Joseph accompanies the paper. 'As long as there is an earthly immortality it must be his, for as long as ever surgery is scientifically discussed his name cannot fail to be mentioned.' Such are the closing words with which Professor Tillmanns feelingly shows his admiration for our countryman. Apart, however, from the interest which must naturally be felt in a description of Sir Joseph Lister's work, the sketch is worthy of note as emphasizing the praiseworthy way in which German surgeons from the first adopted his teaching."

By mistake it was stated in our issue of May 30th, that the British Association for the Advancement of Science would meet in Toronto, Can., this year. The year of meeting is 1897.

The department of the English government relating to factories has been officially investigating the frequency of lead-poisoning among the operatives in factories using the metal. It is not at all improbable that a bill will be introduced requiring that some more insoluble and inert salt be generally substituted for the dangerous "white-lead" of commerce.

CORRESPONDENCE.

AEROPOROTOMY.

To the Editor of The Medical News:

Dear Sir: I have before me a pamphlet entitled "Aeroporotomy," by Dr. S. W. Kelley. Dr. Kelley has expressed the wish that some of your readers might express an opinion upon the acceptability of the new word proposed in his paper. According to the author's explanation, the word should mean "to free, or to let air into the air passages," be it by means of tracheotomy or intubation. It is certainly pleasing for a philhellen to notice the tendency in our profession to use and to coin Greek terms. Unfortunately, however, when new terms are made, like the one mentioned, from the lexicon, by scholars who have learned to translate from the Greek, who, however, have never had the opportunity to understand and speak living Greek, such terms are seldom acceptable. I might furnish an endless number of amusing and also some rather painful incidents which happened in my own hearing when English, French, or German was spoken by people who had learned these languages in school and from books instead of in the natural way, by means of everyday intercourse with the people who speak these languages. It is easy enough to find a Greek word for a new idea, or a new invention, but if such a word cannot stand the test to which it is subjected by real Greeks, it becomes quite another question. Greeks love their language as they love their religion; they are jealous to preserve its purity. Except in everyday or vulgar language, they use no foreign word, and they extirpate incorrect elements, as soon as they have been recognized to exist, in newly-formed words and expressions, with the greatest severity and tact.

Dr. Kelley, in making the word aeroporotomy, has done exactly what other men of learning are in the habit of doing. I do by no means wish to criticise him personally, but I wish to call attention to the deplorable practice of introducing unscientific names into our lexicology. The word aeroporotomy is not acceptable. Ὁ ἀήρ, ἔρος, the air, Ὁ πόρος, passage, and ἀερόπορος means a journey through the air, as, for instance, in a balloon; ἡ τομή is a cut, an incision, an amputation, and cannot possibly be of service when we speak of either a journey through the air or of intubation. The respiratory organs are called ἀναπνευματικά ὄργανα. Many things are possible in regard to combination of Greek words, but I doubt whether a word could be found to express

all that Dr. Kelley wishes to express. At least, it would require quite some thought for a real Greek to tell whether or not such an acceptable word could be invented.

Dr. A. Rose.

332 East 15th Street,
New York.

A NEW URETHROSCOPE.

To the Editor of The Medical News:

Dear Sir: My attention has been called to a description in your last issue (May 23d) of a new (?) urethroscope, by Dr. J. A. Hawkins of Pittsburg. The resuscitation of discarded instruments as new inventions is by no means unknown, but a more flagrant case of this variety of plagiarism would be difficult to conceive, together with an evident ignorance of the modern urethroscope and the principles upon which it is constructed.

Dr. Hawkins commences his article with a short description of the Leiter instrument, in which he tells us that "as the line of vision is over the top of the mirror, little more than one-half of the light thrown in the direction of the mirror can be utilized, owing to the removal of a segment of the mirror to complete the axis of vision." Now, as a matter of fact, *there is no segment removed* from the mirror in the Leiter instrument, nor would there be any advantage in removing one, and as the mirror in that instrument renders the rays *parallel*, instead of "little more than one-half the light thrown in the direction of the mirror" being utilized *only a very small portion of the light*, corresponding exactly to the size of the urethroscopic tube used, is available,

That Dr. Hawkins was unable to use my "perfected" urethroscope to advantage, is not extraordinary, but any one at all versed in the physics of light will readily appreciate how that instrument must give a more powerful illumination than any form of concave mirror.

The instrument Dr. Hawkins presents is identical with *my* old skeleton modification of Leiter's urethroscope, retaining the Leiter handle and including *my* idea of using the Klotz tube, which, up to the time I so used it, never had a fixed light attachment. But Dr. Hawkins tells us that the *principle* of his (?) instrument is that of the ophthalmoscope, or in other words, that he makes a peek-hole through the center of the mirror, through which to observe the urethral field. It is unnecessary to explain here why he would obtain no greater illumination by this method, but it might be excusable to call attention to the fact that the first practical urethroscope ever made, that of Desormeaux, was constructed on this principle, as were all other reflecting urethroscopes, up to the time when Leiter overcame this objection. The first advantage Dr. Hawkins claims for his instrument is that it is lighter than the older instruments, though it weighs *two* ounces, when he certainly should be aware of the fact that my perfected urethroscope (which he could not adjust) weighs less than *one* ounce, constructed of the same material. His second claim that "all the light thrown in the direction of the mirror is utilized" simply shows that he knows nothing about it.

As I discarded the instrument Dr. Hawkins describes, some years ago for what the best urethroscopists in this country consider a better type, I feel unwilling to have it reappear upon the field without a vigorous protest.

W. K. Otis.

5 West 50th Street, New York,
May 26th, 1896.

SOCIETY PROCEEDINGS.

TWENTY-FIRST ANNUAL MEETING OF THE AMERICAN GYNECOLOGICAL SOCIETY, HELD IN NEW YORK, MAY 26, 27, AND 28, 1896.

Dr. William M. Polk, of New York, President.

First Day—May 26th.

Dr. William T. Lusk delivered the Address of Welcome. (See page 629.)

Dr. Paul F. Mundé of New York, presented a paper upon

VIRGINAL AND SENILE ENDOMETRITIS.

He said that chronic endometritis was a very common result of subinvolution, but so far as he knew, virginal endometritis had not been treated of in any text-book. In 1872, Leopold had reported in Leipzig a case of congenital erosion of the cervix, and last February, in Philadelphia, Dr. Charles B. Penrose had read a paper on "Congenital Erosions in a Split of the Cervix Uteri." Senile endometritis had received some attention, particularly by Dr. Skene. Dr. Mundé said that he had seen quite a number of instances in which a virgin uterus showed unquestionable signs of chronic and catarrhal inflammation, and where the lips of the os were so widely separated as to resemble the condition found in a well-marked puerperal laceration of the cervix. He did not believe that the profession was generally aware of the frequency of virginal endometritis, and of the symptoms produced by it. The sexual organs of the young girl ordinarily should not be subjected to local interference by the gynecologist, but there were limits to this rule. He had known young girls, twelve to fifteen years of age, suffer so much from a thick yellow discharge from the uterus as to make it justifiable to employ local treatment. In a case of a young girl suffering from severe menorrhagia, it had been found necessary to curette the uterus. The cervical canal was found to be quite patulous, and the curette removed fungoid granulations. The most common indications of the existence of endometritis were a more or less profuse muco-purulent discharge and menorrhagia. A correct diagnosis could only be made by both a digital and specular examination. The appearance of the cervix was that of a puerperal laceration of the second or third degree, so eroded and everted that a tenaculum could be used, as in a puerperal case, to bring together the lips. The treatment consisted in excising the hypertrophic mucous membrane, curetting the whole endometrium with a sharp instrument and, if there were considerable eversion, in bringing together the everted lips and suturing them. Amputation he did not consider necessary.

Regarding senile endometritis, the speaker said that for many years he had noticed that many women, after passing the change of life, suffered from a muco-serous, pungent discharge, which produced erosion of the lips of the cervix and a chronic bulbo-vaginitis. He had generally treated these cases on the basis of their being due to chronic endometritis. Many of the erosions could be healed by the application of a solution of nitrate of silver, half to one dram to the ounce. Women who had ceased menstruating for a year or two would seek advice because of a return of a sanguinolent discharge—merely a "spotting." This was, of course, a common indication of malignant disease, but not necessarily so. A positive diagnosis could only be made by careful microscopical examination. The foulness of the discharge and the gross appearances often seemingly pointed to malignant disease, and yet the microscope would show the condition to be only a chronic endometritis, with perhaps decomposition of the discharges from retention at the internal os. According to Skene, the presence of a fibroid in the uterus favored the development of senile endometritis, but this had not been his experience. In no case of this kind that had come under his observation had he felt that any severe operation, like vaginal hysterectomy, was justifiable.

Dr. Charles B. Penrose of Philadelphia said that in the case that he had reported there had been a split, five-eighths of an inch long, on one side of the cervix, without eversion, hypertrophy, or evidence of inflammation of the mucous membrane of the cervical canal. The condition seemed to be, in rare instances, congenital.

Dr. A. Lapthorn Smith of Montreal, said that he believed that dysmenorrhea and menorrhagia in young girls were often due to swelling and inflammation of the endometrium and the blocking-up of the canal, with consequent retention of the discharge within the uterus. Tight corsets, exposure of the feet to cold, and chronic constipation were the main factors in the causation of the condition. While the occurrence of sanguinolent discharge after the menopause might be due to senile endometritis, it was not safe to make such a diagnosis, unless confirmed by the microscope, because of the frequency of malignant disease in connection with this symptom.

Dr. Matthew D. Mann of Buffalo, said that in his address before the Society a year ago, he had called attention to the fact that both virginal and senile endometritis were often largely due to certain underlying constitutional states, notably, lithemia, which must be taken into consideration if one would be successful in their treatment.

Dr. Chauncy D. Palmer of Cincinnati, said that in certain cases presenting all the usual signs of virginity, he had observed enlarged and eroded cervices, with everted lips as after puerperal laceration. They had been relieved by trachelo-plastic operations.

Dr. Howard A. Kelly of Baltimore, said that it was difficult to be sure of virginity; the usually accepted signs of that condition could not be accepted as infallible. He had never seen endometritis in an undoubted virgin who had not been previously subjected to some local instrumentation. By the use of the knee-chest position and a small speculum, even a child could be examined and treated without injury to the hymen.

Dr. W. T. Lusk said that many young virgins suffered severely from backache, dysmenorrhea, and menorrhagia. Examination under chloroform would disclose an eroded and partially closed external os, with retained catarrhal secretion. A thorough dilatation of the os externum would relieve all the symptoms by allowing a free exit for the secretions, and would cause the uterus to return to its normal size.

Dr. J. Tabor Johnson of Washington, D. C., said that much unnecessary anguish was sometimes caused families by the medical attendant failing to appreciate the fact that there might exist these eroded clefts of the cervix without any suspicion of the patient's chastity. He would emphasize the point made in the paper regarding the absolute necessity of having the diagnosis of malignant disease of the uterus confirmed by microscopical examination. He had known of two uteri having been removed without this precaution having been taken, and subsequent microscopical examination showed that simple dilatation of the cervix and curetting should have sufficed to effect a cure.

Dr. Cyrus A. Kirkley of Toledo, O., read a paper on

LIABILITY TO PROSECUTION FOR DAMAGES IN ABDOMINAL SURGERY.

He said that in most instances the legal responsibility of the abdominal surgeon was not likely to be insignificant. The jury usually looked upon the medical expert as having a bias for the side calling him. There was a crying need for reformation in this matter of medical expert testimony. He commended the plan of having all the medical witnesses of both sides confer together before giving their testimony, and suggested that some of the present abuses might be avoided if the court were to appoint a medical commission to hear and determine the medical question involved in the case. The speaker also read a legal opinion upon the important question of the liability of a surgeon for opening the abdomen in a case in which death appeared to be certain if no such interference were done. The opinion stated that if well-qualified surgeons agreed that the operation was demanded under the circumstances, the operator should not be liable in damages, even though he had not been able to obtain the patient's consent.

Dr. Kelly recommended the following rules for the better protection of surgeons from prosecution: (1) Keep a written record of all cases and of the visits made; (2) carefully note, as far as possible, in the patient's language the symptoms and nature of the complaint and of the result of the first examination, record the proposed line of treatment and what is promised the patient; (4) never promise absolutely more than the mechanical result of the operation; (5) state clearly the risks of an abdominal operation, and (6) keep careful notes of the convalescence.

Dr. Edward P. Davis of Philadelphia said that an obstetrician might become defendant in a suit for malpractice in a case in which, after a normal parturition, a woman was suddenly seized two or three weeks afterward with pain, the result of the rupture of an ovarian tumor,

and died of sepsis. In the State of Pennsylvania, he said, that in suits for civil damages two physicians were selected to examine the plaintiff, one by the plaintiff and the other by the defendant.

DR. CHAUNCY D. PALMER of Cincinnati read a paper entitled

GYNECOLOGY AND GENERAL MEDICINE; THEIR RECIPROCAL RELATIONS.

He said that clinical experience furnished abundant proof of the intimate relationship between the pelvic organs and the whole nervous system. By the delicacy of her organization, woman becomes subject to a vast variety of disorders, particularly mental affections. Both menstruation and parturition, with their attendant exhaustion, diminish the woman's resistance to disease at such times, and render her particularly liable to infections. The speaker said that, while there was very little gynecology outside the domain of general medicine, there was scarcely a disease of the general system of much importance which did not affect the circulation, innervation, and functions of the pelvic organs. Almost every gynecological condition required some constitutional treatment, hence gynecologists should be physicians, as well as surgeons.

DR. JOHN BYRNE of Brooklyn, said he wished to personally thank the author for calling attention to this much neglected subject.

DR. FORD of Utica, said that there was danger that gynecology would fall into the hands of those who had been exclusively trained for this branch—a condition of affairs which would greatly favor the production of "fads." He cited a case in his practice illustrative of the good results to be obtained only by combining the forces of medicine and surgery.

DR. S. C. GORDON of Maine, said that he frequently resorted to the use of the curette in virgins, and that after such needed local treatment, the frequently associated anemia would be found to yield readily to appropriate constitutional treatment. He thought that there had been altogether too much sentiment shown regarding the examination and local treatment of virgins.

DR. ARTHUR W. JOHNSTONE of Cincinnati, presented the next paper on

THE CLINICAL IMPORTANCE OF THE MENSTRUAL WAVE. (SEE PAGE 636.)

DR. A. J. C. SKENE of Brooklyn, said that he had been much interested in Dr. Palmer's paper. He would define a specialist as one who knows everything about one subject, and a little about every other subject. Facts were at variance with the author of the paper, however, regarding women being peculiarly liable to disease because of the delicacy of their organization. Statistics showed that they were exempt from many diseases affecting males, particularly organic diseases of the nervous system. Regarding Dr. Johnstone's paper he would say that he thought Stephenson's ideas regarding the menstrual wave were worthy of the highest praise; they had proved in his experience a very valuable clinical guide. The paper was highly suggestive. For example, it was not long ago that many believed that epilepsy could be cured in women in cases in which there was palpable ovarian disease, by the removal of these organs; now, the neurologists express the opinion that true epilepsy has never been cured by any operation on any organ in the body.

DR. GEORGE J. ENGELMAN of Boston, said that at one time it had been believed that extirpation of the ovaries would cure many nervous disorders. His experience had been that the uterus had more control over such conditions than the ovaries.

DR. PALMER said that while thoroughly believing in the teachings of Stephenson, he could not accept Dr. Johnstone's statement that this menstrual wave had anything to do with the production of intermenstrual pain. Such pain, he believed, was due to ovulation occurring in an ovary, the cortex of which had become thickened or hardened.

DR. JOHNSTONE, in closing, said that as probably not more than five ovules ripened in the course of a year, he could not understand how intermenstrual pain could be ascribed to a thickening of the cortex of the ovary. He had never seen a case of intermenstrual pain relieved until the menopause had been brought on. He would ascribe such pain to stretching of nerve filaments, occurring on the anemic side of the menstrual wave.

DR. J. CLIFTON EDGAR of New York, presented a paper on

AIDS IN OBSTETRIC TEACHING.

In his introduction, Dr. Edgar stated his conviction that while the best method for a student to learn obstetrics is the personal care of parturient and puerperal women, still much of this experience will prove useless unless he has an intelligent appreciation of his work based upon a previous thorough training in the principles of the subject. It is this training of reason and perception and the aids to it, which have largely taken the place of the old theoretical lecture with which the author's attention is occupied. He is a firm believer in the advantage of models "possessing the third dimension of space" over elaborate description and illustration in the form of diagram. The rachitic pelvis, injuries to the pelvic floor, the relations of the uterus to surrounding parts are far better understood from casts and paper reproductions than from charts however well executed. The models are particularly useful in the training of nurses. A further advantage in their use is the fact that they may be kept obstetrically clean and may be used at the bedside or in the obstetrical clinic. While something has been done in this field, much remains, for example of uteri of known periods of gestation and of pelvic deformities which by their interchange may do not a little to raise the standard of obstetric teaching.

Models are not, in any sense, to replace bedside instruction—they are purely auxiliaries to instruction in its various forms and care must be exercised in their use. They undoubtedly lend a new interest to many points, otherwise obscure and dry. The natural size of the object should always be reproduced or a wrong impression may be conveyed. Diagrams, charts, and black-board illustrations are unsatisfactory and tiresome to the student

and can never be made to impart the practical knowledge obtainable with the aid of a few selected models.

The several varieties of aids to obstetric teaching are, for convenience, divided into five classes: (1) *Plaster Models.* (2) *Paper Reproductions of Clay and Plaster Models.* (3) *Composition Models.* (4) *Miscellaneous Models and Aids.* (5) *Electro-plated Plaster Models.* —For very small objects where minuteness of detail is required, *e.g.*, the non-pregnant uterus, electro-plated plaster models are recommended. A plaster cast is taken of the specimen, carefully dried and copper-plated.

The paper was most profusely illustrated throughout by half-tones of the specimens, models, and casts of all the varieties described.

DR. A. H. BUCKMASTER said that he had found paraffin especially useful as a material for making such models. It could be applied with a camel's-hair brush without causing the patient much discomfort, and from such a model, plaster casts could be taken.

DR. ROBERT A. MURRAY of New York, said that in this country physicians saw chiefly relative pelvic deformity. It should be noted that the average size of the child born at full term in Germany is 6½ pounds, whereas, in this country it weighs 7½ pounds.

DR. KING of Washington, D. C., suggested that in addition to the ingenious models and devices already in use by Dr. Edgar, that he should furnish to the student some form of apparatus which could be taken by the latter to his home and studied at his leisure. It would also be desirable to have made for use in demonstrations before large classes a model of the pelvis several times larger than the normal.

DR. EDWARD P. REYNOLDS of Boston, agreed with the reader of the paper that it was impossible to properly teach obstetrics by models not having the three dimensions. It was particularly desirable that the student should be provided with models which would present to him in a graphic manner the mechanism of labor.

DR. EDWARD P. DAVIS also complimented Dr. Edgar on the ingenuity and originality displayed in these models, particularly those illustrating the lacerations of the parturient tract, and the methods by which they should be repaired. When improved methods would admit of taking skiagraphs through the human body with the X-rays and an exceedingly short exposure, we would probably have another important addition to the means at our disposal for instruction.

DR. EDGAR said that he had not had much success with paraffin.

DR. S. C. GORDON of Portland, Me., presented reports of

TWO CASES OF PREGNANCY FOLLOWING REMOVAL OF BOTH TUBES AND OVARIES, WITH REPORTS OF SOME OTHER INTERESTING CASES.

The first case was that of a woman, thirty-six years of age, from whom both ovaries and tubes had been removed in May, 1891. She became pregnant in June, 1894, and was confined in February, 1895. Since then menstruation had been regular.

The second case was that of a woman of thirty-three years from whom, in 1894, he had removed both ovaries and tubes, but who had continued to menstruate regularly after the operation. Last March she was delivered of a healthy child. Of course, some ovarian tissue must have been left, but the question was as to how the ovum reached the cavity of the uterus.

The next case reported was one of tubal pregnancy, afterwards becoming abdominal. At the time of operation a tumor was found lying in the general cavity, and from it was removed a fetus of about five months, which gasped a few times.

The next case was that of a woman thirty-five years of age upon whom he had operated for a tubal gestation. The tube contained a fetus of about six week's development, and the hemorrhage was all within the peritoneal coat.

EFFECT OF COMPLETE HYSTERECTOMY UPON THE VAGINA.

DR. GORDON then took up the question of the effect of complete hysterectomy on the length of the vagina. By his technic, the broad ligaments were drawn up as soon as they had been cut, and after the completion of the operation the vagina was lifted up above the normal position, so that the vagina was actually lengthened to the extent that it had been drawn up by the suture. He had only found shortening of the vagina in cases in which the cervix had been left.

DR. R. STANSBURY SUTTON of Pittsburg reported

CASE OF DOUBLE OVARIOTOMY, FOLLOWED BY PREGNANCY AND DELIVERY AT TERM.

He said that in October, 1892, Mrs. P. had been admitted to the hospital in a very feeble condition. He had made a diagnosis of ovarian cystomata, and had given an unfavorable prognosis. She had had only one child, six years before. He had removed by operation two multilocular ovarian cysts, searing the pedicle on one side with the Paquelin cautery, but omitting this on the other side, as the cautery failed to come up to the proper heat when wanted. The stump of this second pedicle lay close to one horn of the uterus. The uterus was a little larger than normal, and as it was retroverted, he had raised it and fixed it in the lower angle of the abdominal wound. On June 10, 1894, she gave birth to a large child, and this year was delivered of still another child.

DR. A. LAPTHORN SMITH reported the case of a woman twenty-eight years of age, the mother of two children. Abdominal section had been performed upon her just after a menstrual period, and both ovaries and tubes extirpated. One month later the breasts gave indications of pregnancy, and in due time she was delivered of a child. She had apparently conceived immediately after menstruation, and the fecundated ovum had passed into the uterus just before the operation.

DR. ERNEST CUSHING referred to a case of abdominal pregnancy that he had seen in which the fetus lay in the abdomen, and the placenta partly within, and partly without the tube. He felt convinced that there should be no shortening of the vagina, whether the cervix were removed or not, though personally he preferred to do the complete operation.

DR. A. PALMER DUDLEY of New York, said that he had been deeply interested in conservative surgery on the appendages, for several years past, and he could now point to the records of six cases in which pregnancy had followed such work. Three of these women had already been delivered of living children, and three were now pregnant. One reason for his success he attributed to the use of the catgut ligature, which would soften sufficiently early to allow the tube to become patent.

DR. ARTHUR JOHNSTONE said that the leaving behind of a small piece of ovary did not necessarily preserve the menstrual function. The cases reported might be explained by the existence of "the third ovary," and by the presence of more than one opening to the tube—a not uncommon condition.

DR. GORDON cited a case in which menstruation had persisted not only after a double ovariotomy, but even after the subsequent removal of all the uterus except the cervix.

DR. SUTTON said that if the ligature were applied sufficiently close to the horn of the uterus to cut off the sympathetic nerve, he did not believe there would be any further menstruation.

(To be continued.)

AMERICAN PEDIATRIC SOCIETY.

Eighth Annual Meeting, held at Montreal, Canada, May 25, 26, and 27, 1896.

JOSEPH O'DWYER, M. D., President.

Owing to the necessary absence of the President, DR. JAMES C. WILSON, the first vice-president presided. The first session was opened by the reading of the President's Address, entitled

THE EVOLUTION OF INTUBATION.

This was prepared at the request of the Council, and was a paper of the greatest interest, as it described the labors which Dr. O'Dwyer pursued with untiring devotion to a great idea through five long years. A bivalve tube was first used, but after three years of continuous effort it was abandoned, and experiments were begun with the solid tube. The paper described the various experiments made with various alternating failure and success, until at last obstacle after obstacle was overcome and imperfection after imperfection was removed. As a result of this patient toil, perfected instruments were given to the profession, a very rare thing in the history of medicine. The various steps taken in attaining this great result were narrated with the simplicity and modesty which have always characterized the literary work of Dr. O'Dwyer. A complete set of instruments, showing the evolution of intubation from the first bivalve tube to the present perfected model, proved of the utmost interest.

The first paper was read by DR. GEORGE N. ACKER of Washington, D. C., on

GANGRENE OF THE LUNG, FOLLOWING TYPHOID FEVER.

DR. J. H. FRUITNIGHT of New York, read a paper on

MALIGNANT ENDOCARDITIS,

and presented a specimen. As the bacteriological examination showed that the condition was due to the presence of streptococci, the author advocated the use of streptococcus antitoxin serum in such cases.

At the second session, DR. A. H. WENTWORTH of Boston, read an exhaustive paper on

LUMBAR PUNCTURE,

and reported twenty-nine cases. He affirmed that, while normal cerebrospinal fluid contains neither fibrin nor cells and is clear, it is always cloudy in cases of meningitis, though the cloudiness is sometimes very slight. This is caused by cells, the character of the cells differing with the variety of meningitis. The operation, the author believes, offers a valuable means of diagnosis. For such purposes, however, the microscope is essential, and inoculation experiments are also of value. This was followed by a paper on

TAPPING THE VERTEBRAL CANAL, WITH REMARKS ON LOCAL TREATMENT OF MENINGITIS,

by DR. AUGUSTUS CAILLÉ of New York. He reported twenty-one cases, and believed that a study of the cases reported up to the present time would certainly convince the most skeptical that Quincke's puncture is of positive value as a method of diagnosis. It is simple and usually easy of performance.

In two cases Dr. Caillé injected antiseptics into the subarachnoid space, but without material results. He proposes in some future case to lay bare the dura by removing a button of bone and irrigating from a lumbar puncture upward through an opening in the dura.

DR. C. D. JENNINGS of Detroit, also read a valuable paper on

LUMBAR PUNCTURE,

and reported practical experience.

DR. FLOYD M. CRANDALL of New York, read a paper on the

OCCURRENCE OF INFLUENZA IN CHILDREN,

and reported local epidemics.

DR. SAMUEL S. ADAMS of Washington, D. C., reported an extremely interesting case of

TEMPORARY INSANITY, FOLLOWING TYPHOID FEVER.

DR. FREDERICK A. PACKARD of Philadelphia, reported a case of

ENDOTHELIOMA OF THE BRAIN, WITH ATROPHY OF THE PARALYZED MEMBERS.

DR. HENRY JACKSON of Boston, read a paper on

NASAL FEEDING IN DIPHTHERIA,

in which he advocated feeding by means of a soft tube passed through the nose into the esophagus, in certain cases of diphtheria. As this can be done with ease, it does much by preventing exhaustion of the child's strength.

DR. WILLIAM OSLER of Baltimore, read a paper on the

CLASSIFICATION OF TICS, OR HABIT MOVEMENTS.

He made the following classification: (1) Simple tic or habit spasm. (2) Tics with superadded psychical phenomena; maladie de la tic convulsif; or Gilles de la Tour-

ette's disease. (3) Complex coördinate tics. (4) Tic physique. An imperative idea is the psychical equivalent of, and has an origin similar to, the motor tic. Each of these subdivisions was elaborated and illustrated by practical examples.

The third session was devoted to the

ANTITOXIN TREATMENT OF DIPHTHERIA.

The report of the Collective Investigation Committee of the Society upon the results of the

ANTITOXIN TREATMENT IN PRIVATE PRACTICE

was read. Over five thousand cases were reported, the results being, on the whole, more favorable than any extended reports that have thus far appeared. A complete report will soon be published in full. Dr. P. A. Packard reported favorable results of the antitoxin treatment, and Dr. S. S. Adams read a paper on the

COMPARATIVE RESULTS OF THE TREATMENT OF DIPHTHERIA, WITH AND WITHOUT ANTITOXIN, IN THE DISTRICT OF COLUMBIA.

It appears that the death rate from diphtheria in the District of Columbia, since the appearance of antitoxin, has materially diminished. Dr. A. Seibert of New York, read a paper on

SUDDEN DEATH AFTER ANTITOXIN INJECTIONS.

He reported a series of striking experiments which showed that the injection into animals of carbolic acid, even in very weak solution, was constantly followed by most characteristic spasmodic movements. Another series of experiments was made to determine the effects of subcutaneous injections of air. The results seem to show that antitoxin can contain but infinitesimal quantities of carbolic acid. They also render the proposition reasonable that the few sudden deaths reported after the injection of antitoxin might be due to the injection at the same time of air. The general discussion elicited by these papers was extremely interesting and showed a unanimous and very strong sentiment in favor of antitoxin.

At the fourth session, Dr. Rowland G. Freeman of New York, read a paper on

LOW TEMPERATURE PASTEURIZATION OF MILK.

He proved that 67° C. was sufficient to kill numerous pathogenic bacteria and various atmospheric bacteria, and referred to the importance of avoiding unnecessary heat in the preparation of milk for infant's use. He presented a new apparatus of simple construction, designed to Pasteurize milk at 67° C.

Dr. Charles W. Townsend of Boston, reported several cases of

THIGH-FRICTION IN INFANTS.

Dr. William P. Northrup of New York, reported a most interesting case of

APPARENTLY RELAPSING CEREBROSPINAL MENINGITIS,

followed by death and autopsy, which elicited a warm discussion on the pathology and diagnosis of meningitis.

Dr. Henry Lafleur of Montreal, reported a case of

INSOLATION IN AN INFANT OF THIRTEEN MONTHS.

Dr. A. D. Blackader of Montreal, reported a case of

ENLARGEMENT OF THE LIVER

in a young child, with symptoms closely resembling typhoid fever.

Papers were read by title, by Drs. B. K. Ratchford of Cincinnati, F. Forchheimer of Cincinnati, Irving M. Snow of Buffalo, and Henry D. Chapin of New York.

The last session was devoted to the presentation of pathological specimens. Specimens being presented by Drs. Rotch, Holt, Caillé, Adams, Packard, Acker, Freeman, and Townsend.

The following officers were elected for the coming year: President, Dr. Samuel S. Adams, Washington; first vice-president, Dr. W. S. Christopher, Chicago; second vice-president, Dr. Charles W. Putnam, Boston; secretary, Dr. Frederick A. Packard, Philadelphia; treasurer, Dr. Charles W. Townsend, Boston; recorder and editor, Dr. Floyd M. Crandall, New York; member of council, Dr. William Osler, Baltimore; chairman of council, Dr. William P. Northrup, New York.

REVIEW.

Morphology of the Cerebral Convolutions, With Special Reference to the Order of Primates. By Andrew J. Parker, M.D., published by the Philadelphia Academy of Natural Sciences, 1896.

In the prefatory note by the editor, Dr. F. X. Dercum, we are told that this remarkable, and for this country, really original publication, which was awarded the Boylston prize in 1890, is published at his suggestion on the advice of the publication committee, by the Academy of Natural Sciences.

It is impossible in a brief notice to give any adequate idea of the tireless energy, scientific zeal, accurate observation, and logical interpretation which this book of 100 octavo pages and 35 beautifully executed plates, some of them in colors represent the very nature of the work, places it beyond the requirements of the general practitioner, but it should find a place in every public library, in every laboratory reference library, and on the bookshelves of every scientist interested in the problems of neurology and comparative anatomy. The work is an imperishable monument to the memory of its talented author.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 16, 1896.

May 9th.—Medical Inspector R. A. Marmion detached from the "Newark," ordered home, and placed on waiting orders.

Surgeon L. B. Baldwin detached from the "Cincinnati" and ordered to the "Newark."

Surgeon N. H. Drake detached from the "Franklin" and ordered to the "Cincinnati."

Passed Assistant Surgeon I. W. Kite detached from the Naval Hospital at New York and ordered to the "Franklin."

Passed Assistant Surgeon P. Leach detached from the Naval Laboratory, New York, and ordered to the Naval Hospital, New York.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

MULTIPLE CALCULI OF THE PROSTATE.[1]

BY L. BOLTON BANGS, M.D.,
OF NEW YORK;
CONSULTING SURGEON TO ST. LUKE'S, THE CITY, AND THE M. E. HOSPITALS; AND ATTENDING GENITO-URINARY SURGEON TO ST. MARK'S HOSPITAL.

BY calculi of the prostate, is meant calculi which form within the body of this gland from material furnished by it exclusively; which have not come from the urinary tract, and primarily have no admixture of urinary salts. They form insidiously, grow slowly, and occupy a sac which they painlessly make for themselves within the tissue of the prostate. They are usually multiple, but under certain conditions one or more may amalgamate, forming a single stone, which may attain a considerable size. They are usually found during mid-life, but they have been said to exist even in childhood. Ashurst quotes a case of Dr. Barker of Bedford, England, who removed a stone from the prostate of a man aged twenty-nine years, who had suffered from incontinence of urine from his fourth year. This mass consisted of twenty-nine pieces, hard and white, closely soldered together, and measuring nearly five inches in length. If this mass of calcareous material began at the early age mentioned, it must have been originally very small for, as is well known, the prostate at four years of age measures but a few (12 to 13) millimeters in diameter. Erichsen mentions a lad of nineteen, from whose prostate he extracted two calculi. In view of the theory of the production of prostatic calculi, to which reference will be made, I should be inclined to refer these cases to a urinary derivation and that they had made a sac for themselves in the prostates of these boys as the latter developed.

Under the head of "prostatic calculi," the text-books record many interesting cases, but some of these are not such, strictly speaking, and should be described as urethral calculi, for they have formed upon a nucleus lodged in the prostatic portion of the urethra, and have grown from the accession of *urinary* salts. Some of these attain great size, and have been known to be perforated by a channel for the escape of urine. I have removed several, of small or moderate size, from the prostatic sinus, or from the membranous urethra behind a stricture, or which had formed upon fragments lodged in the prostatic urethra. But these were all composed, either of uric acid, or oxalate of lime, or the ammonio-magnesium phosphates, or of a mixture of these salts, and bore no relation to the calculi which we are now considering.

The number of calculi which may be contained in a sac in the prostate seems to be almost unlimited. Mr. Henry Morris speaks of having removed on several occasions between two and three hundred from the same prostate. Dr. Keyes, some years ago, reported an equally large number, and there are many cases on record in which thirty or forty were found in the substance of the prostate, the tissues being "literally studded with them." As a rule, they do not cause symptoms excepting when erosion into the bladder or urethra has taken place, or when the mass has attained considerable size. Hence they may be easily overlooked during the life of the individual. On the autopsy table they are not infrequently met with, and sometimes their number or size is such as to occupy almost the entire interior of the organ without having given rise to any marked symptom during life. The latter has occurred in my personal experience, and I have also observed cases where the gland was not only sacculated within but was apparently circumferentially enlarged. Hence, in these days of castration for enlarged prostate, the possibility of such an error in diagnosis should not be forgotten. On the other hand, there are cases in whom irritability or pain about the neck of the bladder can only be explained by the presence of these calculi. In some there may be a sense of weight and pain in the perineum and many of the local symptoms of enlarged, inflamed, or irritated prostate. Of course, I admit that the diagnosis of intra-prostatic calculi may be exceedingly difficult, unless some of the conditions to which I have already referred are present, namely: the surface of one of the calculi being felt in the prostatic urethra, or their having attained a great size, or the sensation of "crackling" being elicited by rectal palpation. According to my observation, the sensation of "crackling," on palpation through the

[1] Read before the Surgical Section of the New York Academy of Medicine, May 11, 1896.

rectum, or palpation combined with the introduction of an instrument, as mentioned by many authors, may be absent, and yet the prostate may be full of calculi.

The theory of the production of these calculi seems to be that they start from the minute concretions which are found microscopically in a large proportion of prostates examined after death. Sir Henry Thompson gives a very interesting account of these concretions, and other observers regard them as a *normal* product of the tubules of the gland. But considering the function of the prostate to be the secretion of a bland, though acid fluid for admixture with the semen, I should regard them as abnormal, and the result of some disturbance of function. Later on, their presence in the tubules increases the irritation of the latter, and the concretions gradually receive accessions in size by a deposition of earthy material; the intervening structure of the prostate breaks down, or is absorbed, and a sacculation or pouch is formed in which the calculi lie. Originally, they are of a rounded form, but by compression and no doubt by a certain amount of friction with each other, they lose their spherical shape and become faceted, as seen in the specimen now shown you. They are usually found to be composed of phosphate of lime, a very small proportion of carbonate of lime, and perhaps some animal constituents. These constituents vary in their relative proportions, according to the size of the calculus, the smaller the stone the larger the proportion of animal matter. They are not to be confounded with urinary calculi, although it is true that in some cases where the stone projects from below upward into the urethra, or where a communication with the latter or with the bladder has formed a certain amount of urinary infiltration may take place, and especially if there be prostatic hypertrophy, or any other cause which produces ammoniacal decomposition of the urine, the latter may deposit upon the surface of the calculi a layer of triple phosphates. In the specimen you will observe there is no adventitious deposit.

In illustration of some of the foregoing facts, I beg leave to present the following typical case, which may also be interesting because of questions of diagnosis:

The patient referred to me by Dr. N. G. MacMaster of this city is a man sixty-five years of age, whose general health has always been good. He had gonorrhea when he was eighteen years of age, and again two years later, since which time he has been free from infection. At twenty-five years of age he had a stricture of the anterior urethra operated on, and for two months after the operation sounds were passed. Since then he has had no instrumentation for this condition. About five years ago he passed by way of the urethra a small calculus, and subsequently at different times up to August, 1894, the same thing occurred. Since then there is no history of any calculus. These were probably of renal origin, for the symptoms accompanying the passage of these calculi were always the same, namely, a dull, bearing-down sensation in the left kidney, which he describes accurately, and frequency of urination; but there was no acute pain, no nausea and vomiting, and no prostration. Shortly before coming under observation, he had suffered from frequent nocturnal urination and from some difficulty in starting his stream, which would splutter and dribble, but these symptoms had been relieved by the repeated introduction of a sound by his family physician. During one of these treatments his doctor had appreciated a grating sensation in the deep urethra. At present his chief complaint is of an uncomfortable feeling in his deep urethra—an irritation or sensation of itching. He also has a fixed idea that if he is not attended to his stream will diminish in size. He urinates during the day once in three or four hours, and without pain or difficulty.

On examining him, a calculus was found lodged in the prostatic urethra, but its size and character could not be determined, and all attempts made to seize or dislodge it were ineffectual. At the time, believing it to be one of the renal calculi which had become fixed, his family physician received some suggestions which I had found useful in dislodging the stone in other cases. These were used without success. As the patient did not suffer very much, and business requirements calling him to a distant part of the country, he postponed operation and went along comfortably for nearly a year. In October, 1895, he reappeared in about the same condition, but his symptoms were somewhat intensified. The stone was easily felt and all efforts to dislodge it proving futile, I sent him in to St. Mark's Hospital and, under ether, opened his perineum. A stricture of the urethra at the bulbo-membranous junction was found and was incised. With the exploring finger, a stone was felt projecting from the body of the prostate into the urethra in the median line. It was deeply imbedded, only its upper surface being level with the surrounding tissue. When this was removed another calculus was felt obstructing (slightly) an opening which led into a pouch occupying completely the body of both lobes of the prostate. In this pouch were found twenty-nine calculi, closely packed together and faceted. These were removed, not without some difficulty, because of the small size of some of them and their number. There was no pus or urinary infiltration in this cavity or sac, which was distinctly felt to close or contract upon itself, and at the end of the operation it was possibly about one-third of its original size.

The patient made an uneventful recovery, and

in eleven days was sitting up without having had a bad symptom.

The laboratory report was that the stones consisted of calcium phosphate.

You will observe that these calculi gave rise to no symptoms until they began to emerge into the prostatic urethra, not at any time did my patient have any serious distress. His chief complaint was only an undefined uncomfortable feeling in his deep urethra, and an irritation or sense of itching in the same region. A question in diagnosis was suggested to me by the conditions found at the time of operation. Up to the time of the latter, I had rather taken it for granted that the calculus, detected by the grating of the sound, was one which had come from the kidney and had become permanently lodged in the prostatic urethra. This fixation being accounted for by an apparent moderate enlargement of the prostate, which examinations by the rectum showed. Of course this enlargement disappeared when the sac contracted after being emptied. On finding this sac, the question naturally arose: Were the calculi which he passed in 1890, and subsequently, of renal origin; or, were they of prostatic origin expelled into the urethra?

It is true that the symptoms pointing to their renal origin were mild, and might be suggestive of doubt, nevertheless he *did* have renal symptoms referred to one kidney, and relief followed so soon upon the passage of the calculus that their relation of cause and effect is a reasonable deduction. Notwithstanding the *mildness* of these symptoms, which, by the way, is quite in the line of experience, I am inclined to the opinion that his first calculi were of renal origin, and that subsequently sufficient lesion of the prostatic urethra took place to permit the detection of primary prostatic calculi. As to the source of the latter, there can be no doubt. Taking the clinical history and their chemical composition into consideration, it is evident that these stones formed primarily in the prostate, and had no relation whatever to those formed in the kidney.

MEMBRANOUS ANGINA, SIMULATING DIPHTHERIA, WITH OBSERVATIONS ON ETIOLOGY.

By S. W. S. TOMS, Ph.G., M.D.,
BELLPORT, L. I., N. Y.;
FELLOW OF NEW YORK ACADEMY OF MEDICINE.

THE cases here reported are not those accompanying the acute exanthemata, but those usually designated by the laity as "ulcerated sore throat," "membranous sore throat," "diphtheritic sore throat," and the like—synonyms that have been handed down through the medium of our older medical men, and to which is attached the same idea that is mentally associated by them with "scarlatina" when speaking of a *mild* case.

These cases have been of peculiar interest to me in studying the contributing etiological factors and conditions that seem to underlie each individual case, and are regarded of importance because of the lack of literature on the subject, or the ambiguity of that which is available. In works of authority[1] at my command I do not find such treated of as a disease *per se.* In some, a few cursory lines are devoted to the subject, while many entirely omit all mention of such a condition.

CASE I.—During June, 1895, I attended a girl six years of age, who had a follicular tonsilitis, slight pyrexia, dysphagia, and enlargement of the tonsils. The child was disinclined to exertion, and this condition existed for a day or two before the sore throat appeared. The bowels were constipated, but had been moved by a domestic laxative before I was called. Under appropriate antiseptic gargles, the local condition disappeared within a few days. I requested to see the child use the gargle, and at once saw that she protruded the lower jaw in such a manner as to raise the base of the tongue, preventing the gargle coming in contact with the tonsils. After this was overcome, a marked improvement followed in a few hours. Sanitary surroundings good.

CASE II.—On July 3d, I was called to see a boy, aged eight, of good physique. His general condition appeared good; there was no acceleration of the pulse or increase of temperature. I was told he had been feverish and restless for two nights before. The boy was unable to articulate, had dyspnea, nasal obstruction, and dysphagia. The entire fauces and part of the hard, and entire soft, palates were covered by a thick, tenacious membrane of a dirty grayish color, without any perceptible odor of putrescence; bowels constipated for several days. As the boy had a low order of intelligence (an hereditary feature), I prescribed a mixture of tr. ferri chlor. and glycerin, to be used with a swab several times a day, instead of relying on the problematical results from attempts at gargling on his part, or the still more doubtful use of the spray in the hands of his mother. Three days afterward, I heard he was "just the same," but a week later that he was well. Although the appearance of the local lesion alone would have carried conviction that the trouble was diphtheritic, yet there was absent those cardinal concomitant manifestations which convey to the mind of an observant practitioner, reasonable evidences of that disease. The toxemia as shown in physical and mental depression, muscular weak-

[1] Pepper's "System of Medicine"; "American Text-book of Medicine," Pepper; Hare's "System of Therapeutics"; "Cyclopedia of Diseases of Children," Keating; Osler's "Practice of Medicine"; Strumpell's "Text-book of Medicine."

ness and hebetude, elevation of pulse-rate and general pyrexia, and also the peculiar fetor to the breath, were all absent. The house was situated in close proximity to outhouses, all of which were kept in a most unsanitary state; the stench from them was sickening, especially at night. No other case occurred in this family.

Case III.—On July 11th, I attended A. P., aged thirty, a married woman, in her third month of gestation, well nourished and of large physique, whose general health had been disordered for some months. Temperature, 102.5°, pulse 90; she suffered severely with pain in the left tonsil, which was acutely swollen and congested, and had considerable tumefaction in the cellular tissue of the neck externally. She stated she had had chilly sensations in the previous afternoon, but apart from that had retired apparently in her usual condition of health. In the morning, a white patch appeared on the tonsil, which spread rapidly, despite the energetic use of antiseptic local treatment, to the surrounding structures, and by the following day covered the pharynx, soft palate, uvula, and partly the opposite aspect of the throat, although it did not involve the other tonsil. The fever ranged throughout about 99° to 100° F., and the pulse from 85 to 100, of good and regular quality and fair tension. The urine was examined for albumin several times during the illness, but none was ever present. It was ten days before she was able to leave her bed, and during this time she suffered at times very severely from the pain, dysphagia, and insomnia. There was considerable nervous excitement at times, and on one occasion mild delirium for a few hours. There was a manifest hysterical element, but at no time was there clinical evidence of toxemia, as hebetude, prostration, or threatening symptoms of abortion. The cervical glands were enlarged, and inflammation involved the Eustachian tube and middle ear, causing intense earache, yet none of the parts involved suppurated. The pseudo-membrane was tenacious, white, and thin. There was no ulceration nor fetor. When forcibly removed, it left a raw, bleeding surface, and reformed in an hour or so, extending beyond the former limits. The mouth could scarcely be opened, and the patient at times could not talk, and it was with the greatest difficulty the sprays and local treatment could be carried out or nourishment taken. Within a few hours, on the sixth day, the entire membrane desquamated in large pieces, leaving the fauces entirely denuded of mucous membrane. The patient found it so painful that even nourishment could not be taken, because of the irritation produced. A vegetable astringent gargle, containing carbolic acid, was the only thing that gave even temporary relief until new membrane began to form, which was fully completed within three days. Paralysis of the soft palate followed, yielding within a week under $\frac{1}{80}$ grain doses of strychnia, three times a day. The treatment composed of a gargle of sodii hyposulphite, ac. sulphurus, tr. cinchona, glycerin, and water, with sprays of H_2O_2 diluted, and application once daily of twenty grains to the fluid ounce of ac. salicylic disolved in alcohol, with a brush probang to the pseudo-membrane, that removed it most efficiently. An iron, quinin, and strychnin tonic, containing small doses of bichlorid of mercury, was given throughout the course of the disease. The case was in charge of a trained nurse, who observed all necessary safeguards as if it were one of true diphtheria. Ice and oleate of mercury to the neck gave much relief.

Case IV.—On August 1st, F. K. P., aged thirty-two, the husband of the preceding case, a plumber by occupation, developed a sore throat the day following the cleaning out of a foul cesspool. The onset was not so sudden as in the preceding case, but followed a slight rigor, with considerable febrile movement and a pulse of 100. General malaise, backache, and muscle pains in the lower extremities. On examination of the throat, a small, brownish-gray patch existed posterior to the right tonsil, between it and the posterior pillar. There was no swelling in the pharynx or neck, and only a slight circumscribed hyperemia was noticeable in immediate connection with the patch. This was cauterized with the salicylic acid solution, followed by sprays and gargles, together with constitutional treatment; yet it rapidly spread over the entire fauces and hard palate, almost covering the vault of the mouth. In this case there was no tonsilitis, cervical glandular involvement, earache, nor cellulitis of the neck. The pain was quite intense for two or three days, swallowing was difficult, and there was considerable muscular weakness, yet no profound prostration or other evidences of toxemia. While applying the local application to the membrane, the patient coughed violently into my face, carrying considerable of the *debris* into both of my eyes. I had to go down a flight of stairs, through two rooms, into the kitchen, to the pump, before I could wash the particles from my eyes, yet I had no trouble following the exposure. The membrane was dirty gray in color, without fetor, and entire desquamation took place on the fifth day. No difficulty was experienced in opening the mouth at any time. Paralysis of the soft palate persisted for over a month, with changed voice.

Although there is an apparent causal relation between these cases, being husband and wife, yet the fact remains that the wife had recovered some time before her husband developed his trouble, although he had been more exposed to it during her sickness than in her convalescence. It is significant that this developed the day following exposure for some hours to sewer-gas, together with the fact that his wife doubtless contracted hers from a similar source, and gives weight to the belief that a common agent was directly respon-

sible for the infection of both. I found that the wife washed her dishes in a kitchen sink, which had no trap, over which she stood three times a day for some time, and this was directly connected with the cesspool, some twenty feet from the house.

These people vacated the house after the wife was convalescent. It was subsequently occupied by another family with three small children. The mother and one child had membranous sore throats. The plumbing was overhauled, when the trouble at once subsided. A son, of about twelve years, while helping his father clean a cesspool in a different part of the village, standing over the opening, was affected two months afterward in the same way as the cases above described.[1]

CASE V.—On the same date as Case III, another occurred in a young man, aged twenty, by occupation a baker, whose duties required him to get up after midnight and work until early in the morning in a cellar where damp air and furnace heat commingled. Here he worked, half dressed, while the night air entered in draughts through open windows flush with the damp ground outside. Two nights previous, he had slept out of doors on the beach by the ocean, exposed to the chill air. When I saw him in bed, his neck was considerably swollen on both sides; his temperature was about 100° F., and the pulse 100, where it remained throughout, being irregular and always very compressible. There was very little pain or discomfort in the throat, and patient gargled and took nourishment freely most of the time. Upon examination, the throat presented enlarged and inflamed tonsils, both of which, together with the fauces and post-nasal spaces, uvula, and entire soft, and part of the hard palate, were covered with a thick, tenacious, grayish-white membrane which left raw, bleeding surfaces when removed, and quickly reformed, nor did it disintegrate. Considerable ulceration took place, although it was devoid of fetor at all times. The uvula became necrotic, and sloughed off about midway. There were some evidences of constitutional disturbance in this case, and two or three times he became faint when placed in an upright posture. The boy was very anemic before his illness, and this was very marked during his convalescence. A large eczematous patch of superficial ulceration on the left temporal aspect of his head complicated his sickness, and was curetted down to healthy tissue, and cauterized with pure carbolic acid. The entire desquamation of the membrane took place on the sixth day. Paralysis of the soft palate followed, with nasal voice, lasting for over a month. On the eleventh day of his illness, the patient left for home, a distance of about thirteen miles, without my knowledge or consent. He was very weak and debilitated, and I learned he was quite ill for several days afterward. I incidentally heard that he had quite extensive muscular incoördination in both lower and upper extremities; to what extent, and how long it persisted, I was unable to ascertain, but he subsequently recovered from these. There was no albumin found in the urine at any time.

The sanitary surroundings of the buildings and outhouses where this patient resided were as bad as could be imagined. This patient could not have contracted it from any other case, nor was it possible others developed from him. The two worst cases developed on the same date in different localities, and in both ample opportunity existed for others in the houses to contract it, especially in this last case, where a number of young children lived, and some had been many times exposed directly in the room, and by clothing and other fomites, yet none contracted it.

CASE VI occurred in a weakly boy, aged ten, on 29th of July. It pursued a typical course of chilly sensations, followed by sore throat, anorexia, accompanied by constipation, membrane desquamating on the fifth day. This case was apyretic, except for the first twenty-four hours.

CASES VII and VIII.—Two other children in same family developed sore throats while the last case was convalescing—about the tenth day. They had a very mild attack, so much so that I did not make any personal visits, simply directing the treatment through the mother, who made two reports at my office.

With this family also existed the foul outhouses, pig-pens, hen-coops, and a back yard, where all the slops from the kitchen were thrown, just outside the door.

That these cases are unique, I think, will be readily admitted, from the remarkable uniformity in their clinical course and in the duration of local manifestations. Since microscopical revelations have apparently shown such variation in symptoms of diphtheria in different subjects, yet mortality statistics are tolerably uniform, taking, say, one thousand cases in which the Loeffler bacillus is demonstated to be present. The following is a fair concensus of opinion: "All observers have found the mortality higher in those cases in which the diphtheria bacilli were present than in those in which they were absent. In true diphtheria, the mortality has been found to vary from twenty-five per cent. to seventy per cent., while in pseudo-diphtheria it varies from nothing to twenty per cent."[1]

[1] The habitat of the microbe, when outside of the body, is not known, but it is believed to live in surface soil which is contaminated with organic matter. It is known to grow in excretory refuse.—Pepper's Text-book, p. 377.

[1] Scientific Bulletin No. 1, Health Department City of New York, from Bacteriological Laboratory.

The brilliant achievements of bacteriology, made possible by the microscope, have placed it within the power of health boards and scientific bodies to supply safe and satisfactory means of limiting the spread and combating the mortality of many of the contagious diseases. Yet with our present knowledge all opinions of bacteriologists, and especially those from some of us whose facilities are limited for various reasons, must not be accepted as infallible. The clinician who can use those means himself has infinitely greater advantage in arriving at results in prognosis and diagnosis by comparative methods and existing facts than have the clinician and bacteriologist independently of each other, when only the former sees the case and the latter the pathological specimen. Smears and membranes were examined microscopically, and these, together with the clinical features presented, did not satisfy me that my cases were diphtheria. I forwarded specimens to Mr. Alfred L. Beebe, Ph.B., of the New York City Board of Health, whose courtesy I acknowledge for the examinations he kindly made for me and the report herewith appended.

Dr. S. W. S. Toms, Bellport, L. I.:

Dear Doctor: I have carefully examined the cover-glass preparations which you left with me yesterday, and have also had Dr. Park examine them. I find a number of bacilli, evidently not those of diphtheria, numerous cocci, and a moderate number of bacilli which decidedly resemble true diphtheria bacilli, but are not sufficiently characteristic to admit of a definite decision as to their character. Dr. Park agrees with the above.

Sincerely yours,

Alfred L. Beebe.

It is much to be regretted, cultural or inoculation experiments could not have been conducted at the time. These were not deemed necessary, however, because of the clinical features and the evidence I had of the lack of contagious elements as demonstrated by the families where little or no heed was given to my warnings of its possibility. Despite my earnest endeavors, I often found reckless disregard of them in many ways. The morphological resemblance of some of the bacilli found to those of true diphtheria were doubtless those which have been described by Welch[1] and Abbott,[2] whose cases were almost identical with those of mine.[3] Moreover, the essential characteristics of the Loeffler germ, viz., *its virulency and its specific infectious nature, were wanting.*

Attempts at thorough disinfection of the sick-room and clothing miscarried, yet spread of the disease was not noticeable, with one exception; and *in that case the original cause or source of the primary case remained.*

The results of Hofmann,[1] showing the pseudo-diphtheria bacillus is without virulency, *although its identity with that of the Klebs-Loeffler bacillus was not distinguishable*, have since been confirmed by Roux and Yersin,[2] Escherich,[3] Park,[4] and others.

"If we review the remaining literature of this subject, we find some investigators have been led by the results to adopt views similar to those of Roux and Yersin, others to those of Escherich, and still others forced to content themselves with the position of Hofmann, viz., that we are not yet in a position to affirm whether all these bacilli are of one or of different species of bacteria."[5] "The bacilli found, when studied in pure culture, differ somewhat from each other. The majority were identical in all their characteristics with the Loeffler bacillus, except to their lack of virulence."[6]

As the microscopical evidence leaves the burden of proof in favor of non-malignancy and slight infectiousness, I briefly review the clinical facts, citing, by the way, the apparent etiological elements that seem to have a very noteworthy share in this connection:

First.—The absence of marked or profound constitutional toxemia, prostration, cardiac complications, albuminuria, abortion, or local sequelæ other than paralyses.

Second.—The *de novo* origin of each case. As there is positive evidence against the suspicion of contagion and infection of one from another, through the milk, food supply, or water, or that the disease was brought here from an infected community; and, furthermore, there has not been a case of diphtheria here in many years, and none of the cases stood even the remotest opportunity of exposure to a previous case of the kind, or of diphtheria. The disregard of quarantine did not spread the disease. "In the 350 cases of pseudo-diphtheria investigated, it did not seem that secondary cases were any less liable to occur where the primary case was isolated than when it was not."[7] Conditions existing at the time were very suggestive to my mind as bearing directly upon the cases, and were, in the main, the specific infec-

[1] Welch and Abbott, Bulletin Johns Hopkins Hospital, February and March, 1892.
[2] Abbott, Bulletin Johns Hopkins Hospital, August, October, and November, 1891.
[3] Scientific Bulletin No. 1, Health Department City of New York, from Bacteriological Laboratory.

[1] Hofmann, *Wiener medicin. Wochenschrift*, No. 3, 1888.
[2] Roux and Yersin, *Annals de l' Inst. Pasteur*, 1890.
[3] Escherich, *Berlin klin. Wochen.*, 1893, No. 21 to 23.
[4] W. H. Park, *Medical Record*, July 30 and August 6, 1892, and February 11, 1893.
[5] Scientific Bulletin No. 1, Health Department City of New York, from Bacteriological Laboratory.
[6] Roux and Yersin, *Annales de l' Inst. Pasteur*, 1890.
[7] Scientific Bulletin No. 1, Health Department City of New York, from Bacteriological Laboratory.

tious factors, viz., the exposure to fetor of putrefaction, decomposition, and fermentation from filthy outhouses, sinks, and cesspools.

Sewer-gas is responsible for infection of various kinds, especially the septic, which is well accepted by those who have seen the lessened mortality in institutions where there are no sewers and sanitary(?) plumbing—so-called. The Sloane Maternity is a notable example, and also the results in the pavilions of the Woman's Hospital, in New York City, as compared with those of the main building. At the time these cases occurred, the atmospheric conditions were peculiarly favorable to fermentative and putrefactive processes—a high temperature during the day, cool nights, and very high percentage of humidity. Fungi and their congeners—molds, etc.—grew prolifically, and the effluvia at night from outhouses and cesspools, commingled with the vapors of dampness, were all-pervading in localities where some of these cases existed. The classic clinical features that have been heretofore laid down in works of authority as distinguishing landmarks between true diphtheria and its associates have been shown by bacteriological research to be common to both. A certain general relation, however, does exist between the extent of local involvement to constitutional symptoms, but this is not invariable. It is still generally regarded by very eminent authorities that paralytic sequelæ are pathognomonic of true diphtheria. Bourges,[1] however, has demonstrated to the contrary, the prevalent belief notwithstanding:

"The writer calls attention to the fact that paralysis of the soft palate is not exclusively due to diphtheria, inasmuch as it occurs after typhoid occasionally; and some older authors have admitted the possibility of its occurrence after angina not of diphtheritic origin. The following case is reported: A seven-year-old boy had a pseudo-membranous angina, lasting seventeen days. Bacteriological examination demonstrated the absence of Loeffler's bacilli and of streptococci. The mother was infected, and her throat was also negative as regards the diphtheria bacilli and streptococci. Fifteen days after the disappearance of the pseudo-membrane, the child developed a convergent strabismus, followed in a few days by paralysis of the soft palate and then by an incomplete paraplegia, lasting one month. The development of these symptoms accords perfectly with that of diphtheritic paralysis, in spite of the positive absence of the specific bacilli."

[1] *Rev. in Rev. Mens. des Mal. de l' Enf.*, Tome xiii., No. 6; quoted *Arch. Ped.*, 1896.

It is significant that there was no mortality in this series of cases where no specific line of treatment was followed, that employed being purely symptomatic; no complications occurred, and the only sequelæ were paralyses. The recognition and differentiation of pseudo-membranous anginas are chiefly due to the investigations of Loeffler, Abbott, Martin, Beebe, and W. H. Park, and by others quoted by him. An analogous form of this disease, if not identical, has been recently described by Tidey,[1] as occurring in Switzerland in overcrowded and unsanitary hotels, which he has called "septic tonsilitis."

PRACTICAL INFERENCES FROM CLINICAL OBSERVATIONS IN LATERAL CURVATURE OF THE SPINE.[2]

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In a majority of the patients affected with lateral curvature of the spine it becomes evident at the very first examination that the curvature and rotation are diminished when the weight of the upper part of the body is removed from the vertebral column. This weight may be removed by causing the patient to lie down or to suspend the body by the hands. When the patient is hanging from an overhead bar the deformity largely or entirely disappears. The curved line of the spinous processes partly straightens itself, and the lateral prominences, caused by rotation, partly subside; and when the patient releases the bar these elements of deformity reappear. These changes occur with the repeated use of the bar in a sudden and striking manner. They are also seen when the patient alternates between standing and recumbency. If the patient lies prone the spinous processes arrange themselves in a comparatively straight line, and the shoulders and hips approach symmetry. But when the erect position is resumed deformity returns in full force. Doubtless the same alternations occur with the supine, as well as the prone attitude, but they are not, from the nature of the case, then visible.

It is an interesting question whether spinal curvature and rotation can occur in a child whose attitude is absolutely uninterrupted recumbency, whose body has never been either actively or passively placed in a vertical position. If we say that the downward pressure of the head and the

[1] Tidey, *The Lancet*, December 14, 1895.

[2] Presented at the Tenth Session of the American Orthopedic Association at Buffalo, N. Y., May, 1896.

upper extremities is the immediate cause and that some, as yet unexplained, inability to properly sustain this weight is the indirect cause, we may be right in the supposition that absolute recumbency would be a preventive of lateral curvature. However this speculative question may be viewed the facts above recalled will surely furnish useful hints for the treatment of this deformity in a growing child. "As the twig is bent the tree is inclined" is a proverb applicable here. It follows that suspension and recumbency are two attitudes which should be prescribed, and the more time given to them the greater is the advantage to be gained from the growth of the patient. In suspension there should be no muscular effort beyond that required to keep the fingers flexed on the suspension bar, and in the meantime the body should swing gently, as a means of timing the suspension, seven vibrations, backward and forward, measuring one-quarter of a minute, which is commonly sufficient for each effort. Recumbency should be practised several hours daily, the position being supine, with an air-pillow so placed under the back as to maintain lordosis, and this should be observed so far as it is practicable at night.

Continuing our observations, it is seen, sooner or later, that fatigue or general weakness increases the deformity. If the patient comes in after a long walk or a tiresome journey, or if she is suffering an indisposition, the deformity is greater than it would otherwise be. So that if the patient is pale and tired examination will reveal more than the customary curvature and rotation; while, on the other hand, if she is not tired and is sustained by good sleep and digestion, the general well-being will find expression not only in the face but also in a diminution of the curvature and rotation.

The fact that the intervention of general fatigue increases the deformity is in accord with the view that one of the causes of lateral curvature is muscular failure to hold the spine erect under its natural burden. A sequence of causes may be arranged as follows: Diminution of the capacity of the chest is caused by rotation; rotation is caused (1) by the comparative wide lateral excursion of the bodies of the vertebræ, while the processes are hindered from wide lateral mobility by their entanglement in the posterior parietes; (2) by the curvature; the curvature is caused by failure of the muscular system of the spine to hold the vertebral column erect under its natural burden; failure of the muscles to do their duty is caused by defective innervation; the cause of defective innervation is as yet conjectural.

Whatever may be thought of this arrangement of factors, practically we may accept a hint from the observation that fatigue accentuates the deformity. Throughout the growing period over-exertion should be avoided. The child should not be told to "sit up straight," but rather to lie down. The recumbent position should be often taken and for long periods. Moderation should be the rule in all active amusements, and in all the duties, physical and mental, which fall to the lot of the child at home and at school.

Continuing our clinical observations, we become aware of the fact that the chest is expanded during suspension. This attitude expands the chest with as much directness as manual traction and counter-traction enlarge the cavity of a pair of bellows. The anatomical and physiological reasons for this effect were originally stated by our Honorary Member, Dr. Henry G. Davis.[1] When suspension is practised the muscles, which pass from the ribs to the humeri, attach the sternal ends of the ribs to the suspension bar by the intervention of the arm, forearm, and hand, while the vertebral ends of the ribs are powerfully drawn downward by the combined weight of the body and the lower limbs, producing forced inspiration in a very positive manner. This position is an exaggeration of Sylvester's method for the resuscitation of the apparently drowned, in which the operator produces artificial inspiration by drawing the arms forcibly above the head. In suspension, however, the force applied is the weight of a large part of the body, and is much greater than can be applied by manual traction on the arms of a supine patient. The repeated and persevering application of this force may be reasonably expected in time to have a lasting effect on the size of the thorax and the size of the lungs, and further consideration will show that in this agent we have a method of directly opposing the deformity, of doing what we vainly try to do by the use of mechanical pressure. A brace is powerless to reduce rotary lateral curvature. Its application is injurious rather than beneficial. As the ribs are attached chiefly to the processes instead of the bodies of the vertebral column, the first effect of the lateral pressure made by a brace on the ribs is to increase rotation, and curvature, and contraction

[1] "On the development of the thorax by special exercises, as a prophylactic and remedial measure in phthisis and other chronic affections of the lungs." *American Med. Monthly*, March, 1858, pp. 161–173. "Conservative Surgery," 1867, pp. 283–307. These pages were reprinted with the title, "Curability of Pulmonary Consumption."

of the chest. With suspension, however, what we cannot do by pressure from without, we can do by over-filling or inflating the space within, by a forced development of its normal contents. The emphasis thus given to the value of suspension is increased by the consideration that improved respiration applies a stimulus to the general health and indirectly gives tone to the muscular system, whose failure is one of the causes of lateral curvature.

Our knowledge of the pathology of this affection is insufficient to determine its treatment, but clinical observation provides a rational ground for active and persevering treatment, with a certainty of preventing an increase of deformity and a prospect of improving the condition in favorable cases.

CLINICAL MEMORANDUM.

DEATH FROM GONORRHEAL RHEUMATISM.

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THE following case is of interest chiefly from the rarity of not only the complication, but especially on account of the unfortunate termination.

F. L., aged twenty-two years, a clerk, presented himself November 3d, suffering from an acute gonorrhea. As the glans and urethra were in a high state of inflammation, I prescribed a mixture of potassium citrate and tincture of hyoscyamus internally, and instructed him to call again in three days. This he failed to do, but appeared a week later, and stated that he had been unable to come to the office at the specified time, as he had been out of the city on business, which proved to be an untruth. At this time he began to act a little peculiarly, but this was attributed to a desire on his part to conceal the supposed fact that he had been using some proprietary article and found it necessary to return to us, and make a business trip the excuse for absenting himself. At this visit he also complained of pains in different parts of the body, and he was given a prescription containing acetanilid, potassium nitrate, potassium bicarbonate, and hyoscyamin sulphate.

The next morning I was summoned hastily, and found him wildly delirious. The friends said they had heard him talking all night, but supposed he had brought a friend home with him. In the morning they found him in his room, and he had taken the furniture apart and thrown his jewelry into a cuspidor. During the night he had struck his head against the joists in the cellar while after coal, and wore quite a contusion on the right frontal region. His pulse was 130, and at first I supposed I had a case of hyoscyamin poisoning, as there was considerable midriasis; but on taking his temperature my suspicions were set at rest, as the thermometer registered 103° F. He complained of his wrist hurting him somewhat, and there appeared to be a little swelling. He was given the bromids of potassium and sodium, and bathed.

By evening he was less delirious, and the next morning was almost free from hallucinations, his mind wandering slightly at long intervals. He still complained of his wrist causing him great pain, and he was given oil of gaultheria and bicarbonate of sodium, thinking that perhaps the gonorrhea had nothing to do with the case, and that he was suffering from articular rheumatism. A few granules of morphin were left, with instructions to give him a granule (one-twelfth grain) every fifteen minutes until relieved. Delirium had about ceased by the third day, except at nights. An ointment of ichthyol was prescribed, and the bowels were kept freely moving by the use of calomel.

He continued in the same condition until the sixth day, when the sodium was discontinued and the oil of gaultheria continued alone. On the ninth day, as the delirium continued, the oil of gaultheria was discontinued, and he was given sodium bromid and sodium bicarbonate. On the twelfth day, I thought it advisable to put him on the sulphate of quinin, and, as the heart had gradually become weaker, he received some alcohol. This was stopped as soon as the heart returned to a good condition again. There had been no urethral discharge since the fever came on, and no local treatment.

About this time it was noticed that he was very hard to wake, and involuntary evacuations from the bladder and rectum occurred. He complained of no pain, except when the right arm was moved. The elbow of the same side also swelled a little, and became painful. From this time on there was little change, except that coma became more complete, the patient dying on the nineteenth day. The *ante-mortem* temperature registered 105.6° F., although it had at times during his illness registered between 98 and 103.5 F. The pulse became very rapid, reaching 170. The respirations were rapid and irregular, and later of the Cheyne–Stokes character. The pupils remained equal and about normal during the entire period of illness, after the first three days. At no time were there convulsive movements. As the urine was passed with the feces, and involuntary, and as the urine had been discharging pus, there was little chance for examining the urine, but I am satisfied it was due neither to diabetic nor uremic poisoning. At all times the heart-sounds were clear and distinct. No abscesses appeared on the patient. Nausea was never present. There were no paralyses.

I have been unable to ascertain the number of deaths recorded as having occurred from gonorrheal rheumatism, but the number is very limited. It is probable that more cases have occurred than is supposed, but that the medical attendant has, through apathy, or possibly the nature of the disease, failed to report the case under its proper name.

MEDICAL PROGRESS.

Celiotomy in the Newborn for the Relief of Hernia of the Umbilical Cord.—MARJANTSCHIK (*Centralblatt für Gynäkologie*, 1896, No. 13, p. 345), has reported the case of a woman, twenty-four years old, whose third child pre-

sented by the feet, and was delivered with manual aid. The placenta had to be expressed, and contained calcareous deposits. The child was asphyxiated at birth, but was resuscitated, after active efforts by swinging. Projecting from the middle of the abdominal wall was a hemispherical mass as large as an apple, whose upper margin corresponded with the ensiform cartilage, and the lower with the umbilical cord. Its base was surrounded by a dense band of cicatrix-like skin. The tumor itself proved to be composed of a sac with thin, translucent walls, overlying the liver. Into this sac entered the umbilical cord (amnion and Wharton's jelly). In addition to these tissues, the wall of the sac was composed of peritoneum. By means of manipulation, it was possible to restore the intestines through the opening and to partially approximate the margins. The size of the tumor was little influenced by crying on the part of the child. On the second day of life, the surface of the sac commenced to lose its translucency and to assume a yellowish-green hue. The condition was recognized as a hernia of the umbilical cord, and immediate operation was proceeded with. The amniotic layer of the sac was carefully dissected off, the vessels of the cord freed from the Wharton's jelly and ligated and divided, and the exposed peritoneum removed. The prolapsing viscera were held in place by means of compresses. The margins of the opening were freshened and then sutured. The operation occupied fifty-five minutes, and a dram of chloroform was required for anesthesia. After the operation, the upper and lower extremities of the child were deeply cyanotic, so that it was enveloped in cotton and surrounded by hot-water bottles. The utmost care was observed in the nursing. The child partook of sugar water and of milk with a little cognac, and emptied its bowels and bladder. Slight jaundice developed on the second day after the operation, but soon disappeared. The temperature pursued an irregularly high range, and death took place when the child was five days and fourteen hours old, amid signs of great weakness. The bandage was removed before death, and it was found that the wound was in excellent condition, with its margins firmly adherent.

Death Eighteen Hours After the Introduction of a Bougie into the Urethra.—Muller (*Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, 1896, B. vii., H. 3, p. 137) has reported the case of a man, thirty-eight years old, with a history of gonorrhea in youth, who came under observation on account of some difficulty in micturition. He had previously been treated for stricture of the urethra. The urine was turbid, and passed in a small stream. A diagnosis of vesical catarrh, with moderate stricture of the urethra, was made, and to determine the degree of narrowing, metallic sounds were employed. A No. 21 conical instrument, with a long curve, was first gently introduced, with due antiseptic precautions, and an impossible obstruction encountered in the membranous urethra. With still greater care, a No. 23 sound was next used, but also without success. The examination was unattended with pain, and but little blood was lost. A prescription containing uva ursa and sodium bicarbonate was given, and the patient sent home. Three or four hours after the manipulations, and immediately upon taking his medicine, the patient was seized with vomiting and diarrhea, followed by chill, restlessness, general prostration, pains in the chest and in the sacral region, and excessive thirst. Eighteen hours after the use of the bougies the patient died, amid symptoms of cardiac failure. Upon *post-mortem* examination, the heart was found to be slightly fatty and the lungs edematous. There existed cloudy swelling of liver, spleen, and kidneys. Portions of kidney were put aside for histologic examination, to determine if nephritis existed, but were inadvertently lost. The ureters and pelves of the kidneys presented no abnormality. A tight circular stricture was found involving the membranous urethra, and, close by, several diverticular depressions of the urethral mucous membrane, one of which appeared to have been recently eroded. Copious greenish pus escaped from the prostate gland. The mucous membrane of the bladder was in a catarrhal state; the viscus contained a small amount of turbid urine. The opinion is expressed that the fatal issue in the case reported is to be attributed to an acute nephritis, induced, perhaps, through the introduction of pus from the prostate through the erosion in the urethra.

Post-mortem Cæsarean Section, with Delivery of a Living Child.—Erdheim (*Centralblatt für Gynakologie*, 1896, No. 14, p. 377), has reported the case of a woman, thirty-two years old, in the sixth or seventh month of pregnancy, in which tracheotomy was performed for the relief of grave symptoms resulting from the compression of an enlarged thyroid gland. Partial relief followed the operation. On account of the retrosternal situation of the goiter, its extirpation could not be considered, and a course of treatment with thyroid tablets was accordingly instituted. The condition of the patient seemed improved, when suddenly copious hemorrhage took place from the tracheal wound, and soon terminated fatally. As the woman had now reached the seventh month of pregnancy, and the movements of the child were perceptible, immediate Cæsarean section was undertaken and successfully effected. The child corresponded in size and weight to the period of the pregnancy, and though moderately asphyxiated, breathed freely after slight swinging to induce artificial respiration. It also took some liquid nourishment offered it. It lived, however, only 13½ hours, death resulting from asthenia.

Tabes Dorsalis Without Incoordination.—Grandmaison (*Médecine Moderne*, 1896, No. 20, p. 156) has reported the case of a man previously well, who, at the age of sixty-one years, was affected with impairment of vision progressing in the course of six months to complete blindness. The optic papilla was found atrophied, and the change was believed to be tabetic. The patient also suffered from time to time from intestinal tenesmus, with an imperious desire to evacuate the bowels. Examined seven years later, it was found that the knee-jerks were entirely abolished, the rectal crises having meanwhile continued. In the further progress of the case, arterio-sclerosis developed and symptoms of myocarditis made their appearance.

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REVIVAL OF THE OLYMPIC GAMES: IS IT WISE?

IN spite of the many broken bones and disfigured faces, to say nothing of the many fatal accidents that have attended the game of football in recent years, the popularity of athletic contests seems steadily on the increase. From the simple and healthy competition of class rivalry in our colleges, the spirit of emulation spread to intercollegiate games, in which the champions of the individual colleges met to contend with all the tremendous energy and fury of mortal combat. To this spirit of rivalry has gradually been added the incentive of international contests of more or less celebrity, such as the Henley regatta and the international athletics. And out of these arose finally the idea of reviving the old Olympic games.

This idea, once conceived, needed no arguments to bring conviction to the athletic world. It appealed irresistibly to all lovers of manly sports. The very name Olympia brings before the imagination forms of classic heroes who met their opponents in the arena in honorable, manly contest and carried off the palm of victory amid the plaudits of the assembled thousands. Nor can we resist the conviction that the ambition thus aroused to gain the coveted prize was the means of bringing the human form divine to its highest development, and that in the ancient Greek we have the ideal perfection of that physical beauty.

The result of the suggestion was that in April last an international contest, known as the Revival of the Olympic Games, was held in the ancient stadium at Athens. Ten of the leading nations of the earth were represented, and we as Americans were justly proud of the fact that the United States carried off more prizes than any other nation. We exulted in the success of our champions, and proclaimed the glories of the Olympic games in reviving the spirit of chivalry, awakening national pride, and consolidating peace and friendship among nations. We rejoice too in the stimulus thus given to athletic sports, and the cultivation of physical prowess and vigor.

This is all very well in its way, but the question arises what is the effect of all this training and effort on the individual contestant? What does the physiologist say? Is it true that these benefits are all obtained only by the sacrifice of him who takes the palm?

The Hospital, in an editorial on the physiologic cost of a boat-race, suggested by the recent Oxford-Cambridge race, says:

"Speaking as judicially as is possible, a physiologist cannot but express the conviction that every man in the two boats, except, perhaps, the two coxswains, must have been, to some extent, injured. In a definite number of cases, the injury is lifelong to individuals; and in every race every man can hardly fail to be more or less of a sufferer for a longer or shorter time. Such is the game, and such is the candle."

These arguments do not apply to all athletic games to the same degree, for in none of them, except perhaps the long-distance run, is the physiological strain kept continuously at the highest possible pitch of tension for so long a time. But the disastrous effects of overtraining and the supreme effort of the contest apply with equal force to all.

Train as systematically, as methodically, as scientifically, as he may, the supreme moment of the final struggle is, as a rule, too great a strain

for the heart or the blood-vessel, and the record-breaker then and there too often puts the seal of a shortened existence upon his life. The records of insurance companies show that a surprisingly large percentage of the college athletes—the heavyweights of the football team, the sprinters in the race, or the stroke-oars of the crews—have a weakened heart or a diseased kidney, or both.

Recognizing, then, the fact that the contest is deleterious to those who take the active part, is it fair to encourage the college athlete to enter the lists and take upon himself these risks? These games are restricted to amateurs, and amateur athletes, in this country at least, are to be found almost exclusively among college students. The amateur is not like the professional, who has no ambition in life beyond his athletic prowess. The contest, to him, is but an incident in his preparatory career. If this training and this experience fitted him the better to meet the demands of his future career, it would certainly be a desirable preparation; but the average college athlete sooner or later enters one of the professions, and has nothing in his daily life to keep his over-developed muscular system and his overtaxed heart and kidney in condition. He is less able to meet the nervous wear and tear of a sedentary life than his more equally balanced, but less athletic comrade.

From the standpoint of the physiologist, it must be conceded that the college athlete is too young and immature to subject the functions of nerve and muscle and heart to the strain of a contest where so much is at stake as the world's record, the medal, and the palm of a great international contest like the Olympic Games.

GENITO-URINARY DISEASES. RECENT ADVANCE IN THE KNOWLEDGE OF CYSTITIS.

Upon no branch of medical knowledge has bacteriology thrown more light than upon the various inflammations of the bladder and of the genito-urinary tract. Until ten years ago our ideas as to the etiology and pathology of cystitis were, judged by the standard of to-day, crude and inaccurate. But since that date an era of light has set in. In the early days of the bacterio-pathologic research into the phlegmasiæ of the urinary tract, between thirty and forty varieties of microbes were found and were regarded as more or less potent etiologic agents. The result of the discovery of this vast genito-urinary flora was, in the main, bewilderment of mind, and no precise and sharply-defined scientific knowledge was then gained. As time went on, however, the subject became more simplified; many supposedly harmful microbes were found to have little or no pathologic influence, others were proved to be harmless saprophytes, still others of accidental occurrence; while many were found to be simply different varieties of a parent stock. In these studies Guyon and his disciples have taken front rank but other investigators are entitled to much credit for the classification and amplification of the knowledge which we now possess. It is but fair to state that the most complete portrayal of cystitis has been made by Melchior, a Dane, (*Cystite et Infection Urinaire*, Paris, 1895), and that the value and importance of his work in the French translation has been much enhanced by notes and comments by Guyon and Hallé, who are in accord with him on all the main issues. Melchior's essay is based on thirty-five cases of chronic cystitis carefully studied by him clinically, microscopically, and bacteriologically, and it has the further advantage that the essential points of about two hundred cases observed by many writers and experimentors are given in a critical analysis. From these storehouses of knowledge, therefore, much can be gained and various forms of cystitis may be traced on broad lines.

To approach the study of cystitis intelligently, two considerations relating to old ideas present themselves. In the first place it must be remembered that advanced thinkers and experimenters utterly repudiate the existence of the so-called catarrh of the bladder. Such a condition is a myth, bladder inflammation being really a suppurative process of varying degrees of severity, and in its mild form (which is generally called catarrh of the bladder) the tissue-exudate is pus and not mucus. In the second place the old idea that ammoniuria, or cystitis with ammoniacal urine, presents the type-form of bladder-inflammation is almost wholly incorrect, since ammoniacal decomposition of the urine is, in the vast majority of cases, secondary to other pathological conditions. As a corollary

of the last postulate it may be stated that in the majority of cases of cystitis the urine is acid, and ammonia is not present in it. Fetid urine is not necessarily alkaline nor ammoniacal.

In the development of cystitis certain underlying conditions of mucous membrane must exist in order that a condition of receptivity or susceptibility to microbic invasion may be present. In retention of urine, particularly when of long standing and severe from any cause, the bladder-tissues become much distended and may be more or less injured, and in this altered condition of their nutrition they cannot, as they may when normal, resist invasions by micro-organisms. Then again, in chronic gonorrhea the urethro-cystitis which is not infrequently present, becomes a focus from which the whole cavity may be infected. Clinical observation has shown that this susceptible condition or tendency to bladder-inflammation varies in different persons; some patients seem exceedingly susceptible, others less so, while still others are almost immune.

By a remarkable concensus of statement it seems that the most frequent pathologic agent in cystitis is the *bacterium coli commune*, which, in thirty-five cases examined by Melchior, was found in sixty-six and two-thirds per cent. Next in order is the *streptococcus pyogenes*, which Melchior found in four cases. Cystitis depending upon these microbes which usually are found singly in a case, and exceptionally in combination, may present varying clinical phases, but the urine is usually fetid in odor and acid in reaction. Upon long standing outside the body or in cases of retention with overflow and long-standing residual urine, Hallé and Guyon think that the *bacterium coli commune* may exert a mild action in decomposing urea and in developing ammoniuria. Melchior, however, is not of this belief.

It seems that the most energetic and dangerous microbe found alone or in combination with one or both of these fore-mentioned micro-organisms is the *proteus* of Hauser. This bacterium exerts an energetic action in the decomposition of the urea, and by means of the ammonia, which it produces without any adjuvant influence, may cause inflammation in a perfectly healthy bladder. In other words, without any tissue predisposition, this microbe may cause cystitis by reason of the chemical irritant which it can produce in urine. Cases of cystitis due to the *proteus* of Hauser alone or in combination with the *bacterium coli commune*, or the *streptococcus pyogenes*, are always those of exceptional gravity and in these urinary infection is frequent and often deadly, and ascending invasion of the ureters and kidneys is quite a common complication.

Though Melchior found in the purulent ammoniacal urine of three cases the *staphylococcus ureæ liquefaciens* the exact essential causative relation of the microbe to cystitis is not yet clearly demonstrated, since it was found only once in pure culture. It possesses, as does the *diplococcus ureæ liquefaciens*, the power of decomposing urea and producing ammoniuria. These two microbes, together with the *strepto-bacillus anthracoides*, which were first described by Melchior, certainly are pathologic to the bladder tissues, but further observations are necessary to clear up the doubt which is warranted, as to their being the primary agents of infection.

On the question of gonorrheal cystitis Melchior's observations are very interesting, since they enable him to definitely state that he has in such cases found the pathologic agent to be the gonococcus. This experience is, in my judgment, exceptional, and Hallé, in a footnote, undoubtedly states the correct facts when he says that in general gonorrheal cystitis is due to secondary infection, but that in a minority of cases the gonococcus is the cause of the inflammation.

No doubt can now be entertained of the fact that the bacillus of tuberculosis may be the active cause of a severe form of cystitis in which the urine is purulent, acid, and sometimes bloody. Both Melchior and Hallé rightly insist that great care and technical skill are demanded in the examination of the urine for the discovery of Koch's bacillus, which was found seventy times in two hundred examinations by Hallé.

Though we know that the genitals of males and females, even those of strictly cleanly habits, swarm with microbes, innocent and pathogenic, it is interesting to learn that by careful gathering and culture Melchior found the *bacterium coli commune* and the *staphylococcus pyogenes aureus* upon the prepuce, in the vulva and vagina, and upon the lips of the meatus, both male and female. When to

this knowledge is added the well-demonstrated fact that in the normal, and particularly in the diseased urethra, several forms of pathologic microbes are constantly present, it can readily be seen how easy it is to set up an inflammation by the conveyance of these micro-organisms by means of instruments into a susceptible bladder. The necessity for great care and antisepsis in operations, both minor and major, upon the male and female bladder is hereby forcibly brought out, and well may Melchior emphasize the warning to *never provoke a cystitis*.

The etiology of cystitis may be summed up in the following manner: The external genital and urethral canals, male and female, teem with microbes which, if carried by any means into a bladder vulnerable to infection, may produce cystitis. The most constant infecting agent is the *bacterium coli commune*, and next in order certain streptococci and perhaps staphylococcocci, all of which produce severe forms of cystitis. The *proteus* of Hauser primarily or secondarily to one or several of the above-mentioned microbes may cause a severe, even rapidly fatal, form of cystitis. The gonococcus and the bacillus of tuberculosis are potential agents in bladder inflammation in a smaller number of cases.

Though there may be some truth in the claim set forth by Reymond (*Cystites Consécutives à une infection de la Vessiè à travers ses parois, Annales des Mal des organ Gén Urin*, April and May, 1893) that cystitis primarily may be caused by microbic invasion of the bladder tissues from without, *e.g.*, from some morbid focus in the pelvis or connected with the rectum or intestines, no authoritative statements can now be made.

Robert W. Taylor, M.D.

ECHOES AND NEWS.

The death of Sir J. Russell Reynolds occurred at his home in London on May 29, 1896. He was born in 1828, and began the practice of medicine in 1852.

The International Congress of Dermatologists will convene in London August 4th next. Among those expected from America at this session are Drs. Duhring, White, Bulkley, Keyes, and Fox.

Dr. Robert Abbe has resigned from the Professorship of Surgery in the New York Post-Graduate Medical School and Hospital.

Reports of the increasing spread of the bubonic plague in China continue to come with every steamer arriving in San Francisco from Oriental ports.

Dr. M. Allen Starr of New York, has been elected president of the American Neurological Association for the ensuing year. The meeting of this Association held last week in Philadelphia was one of the most successful in the history of the organization. The next session will be held at Washington in 1897, in connection with the American Congress of Physicians.

The American Association of Genito-Urinary Surgeons closed its annual meeting at Atlantic City June 3d. The officers elected for the coming year were Claudius H. Mastin, M.D., of Mobile, president; F. S. Watson, M.D., Boston, vice-president; W. K. Otis, M.D., New York, secretary; L. Bolton Bangs, M.D. and J. A. Fordyce, M.D., New York, members of the council; R. W. Taylor, M.D., New York, delegate to the international convention, and E. L. Keyes, M.D. alternate. The next meeting will be held in Washington, D. C.

Dr. Homer Virgil Milton Miller died at his home at Rome, Ga., on May 31, 1896. He had spent a most active life of eighty-two years and at his death was Dean of the Atlanta Medical College. Besides merited prominence as a practitioner and teacher of medicine Dr. Miller has held a prominent place among the Southern statesmen since the ante bellum days and served as United States Senator from Georgia in 1868.

Dr. A. L. Metz, who was appointed temporary Professor of Chemistry to fill the vacancy in the Medical Department of Tulane University, New Orleans, caused by the death of Professor Joseph Jones, has been elected permanently to the chair.

Three doctors, belonging to the medical staff of the almshouse on Blackwell's Island, have been arrested on a warrant charging them with stealing and appropriating to their own use drugs and supplies furnished to the almshouse by the city. A fourth doctor, whose name was included in the warrant, went to Canada several weeks ago. By the arrest of the three prisoners it is thought that a systematic stealing of supplies, which is said to have been going on in the charity institutions of the city for several years, will be brought to a termination. If the suspicions of the authorities be correct, thousands of dollars' worth of drugs and medicines, paid for by the city, have been appropriated to the use of doctors attached to the staff serving on the Island. Expensive drugs, bandages, and other appliances used in the medical and surgical wards of the city institutions have disappeared by wholesale. The defense is that custom has sanctioned the taking of these articles, which are regarded by the doctors as perquisites for their labors during their terms of service on the house staff. The value of the articles taken was estimated at $500. Taking the four doctors as a factor in calculation, and estimating their perquisites at $125 a year each, the outcome is astonishing. Now, fifty doc-

tors leave the various institutions every six months, or one hundred a year, and, if everyone fitted himself out with a kit of the same value the annual expense would amount to $12,500. It is highly improbable that any such custom has prevailed.

AT a meeting in Albany on June 1st of the New York State Lunacy Commission, with the superintendents of State Hospitals, the plans for an addition to the Ward's Island Hospital, to accommodate 150 patients, and a building to be erected at Center Islip for 100 patients, were accepted, as were also the plans for the groups of cottages to be erected at King's Park in connection with Long Island State Hospital.

THE Queen has reappointed Mr. Thomas Pridgin Teale, M.B. Oxon., F.R.C.S. Eng., a member of the General Council of Medical Education and Registration of the United Kingdom. This will be the fifth term of five years' service for Mr. Teale.

IN Harris and Beales on "Pulmonary Tuberculosis," a recent publication by the London house of H. K. Lewis, there is given a remarkable instance of the arrest and cure of the tuberculous process by the advent of an acute disease. Two young men in the last stage of pulmonary consumption were attacked with virulent smallpox; both recovered, and at once the pulmonary symptoms disappeared. The patients gained flesh and strength and are now the living images of health. In another case an attack of acute rheumatism was followed by disappearance of the symptoms and signs of advanced phthisis.

THE following preambles and resolutions were unanimously adopted by the American Pediatric Society, which met in Montreal, Can., May 27, 1896, and signed by most of the members present:

Whereas, A bill is at present pending before the Congress of the United States entitled, "An Act to Prevent Cruelty to Animals in the District of Columbia," which curtails experimentation upon animals, and would put a stop to medical research; and

Whereas, It is very probable that such legislation would influence greatly similar legislation in the various States which would prevent the advancement of medical science and of medical education; and

Whereas, Such legislation would be very prejudicial, and is not called for by any existing facts of cruel experiment, as the advocates of the bill themselves concede so far as the District of Columbia is concerned; be it

Resolved, That the American Pediatric Society, now in session at Montreal, presents these resolutions as a memorial to Congress and enters a protest against the enactment of such legislation, declaring it to be needless and injurious.

Resolved further, That a copy of these resolutions be sent to the journal of the American Medical Association, and to the other weekly journals.

IT appears that only recently have our English friends been brought face to face with the question of female doctors and their relations to the medical profession. By a substantial majority they were last month excluded from membership in the London Pathological Society. The matter of the indelicacy of discussing certain subjects in their presence being the only shadow of an excuse offered for this decision. Strong opposition with threats of a "boycott" on the part of the students of the Irish College of Surgeons and Catholic University has followed the appointment of Miss Dickson as examiner in gynecology. She is a doctor of the highest attainments in this specialty, a Fellow of the College of Surgeons and in every way eminently suited for the position unless her sex should be considered the disqualifying element.

AS has been confidently expected, the warmer weather has increased the virulence of contagious diseases among the Spanish troops in Cuba. No reliable statistics are published but it is confidently asserted from observation that yellow fever is daily increasing the death rates. Smallpox is also raging in many parts of the island. One town is known to have suffered ninety-six deaths from the latter disease during the past month.

IN a recent letter to *The Lancet*, an English optician uses the following expressions which convey a few of the good thoughts of his communication: "I think the majority of opticians—those, at least, who have a due sense of the responsibilities involved—look forward hopefully to a time when people will go as naturally to the medical practitioner for advice on eye and sight troubles as they do now for defects of hearing. I think, too, they are doing good work, each one according to his opportunities, toward bringing that time about. No encouragement should be given to proposals for measures, legislative or other, such as have recently agitated the State of New York. Feelings of rivalry should be restrained, and the issue left to easy and natural development."

THE WOMAN'S MEDICAL COLLEGE OF BALTIMORE has lengthened its annual course to eight months (October 1st to June 1st). The following appointments have been made in the faculty: R. Tunstall Taylor, M.D., Professor of Orthopedics; Thos. C. Gilchrist, M.R.C.S., Professor of Dermatology; Henry P. Hynson, Ph.G., Professor of Pharmacy; G. Milton Linthicum, M.D., Professor of Physiology; Kemp B. Batchelor, M.D., Associate Professor of Obstetrics. A Chair of Mental Diseases has been added; also departments of Bacteriology and Embryology. Professor Claribel Cone has been elected to the Board of Trustees.

THE number of human lives sacrificed by the drinking of carbolic acid, either accidentally or intentionally, is becoming so great that it will evidently be impossible to allow the free sale of it to continue. A London paper states that in a single week no fewer than nine persons met their death in that city from this agent.

AN entertaining writer in the Johns Hopkins Hospital *Bulletin* believes that he has found a classification of surgeons under the following heads: There are two distinct tendencies observable in that wonderful wave of recent surgical progress of which we are so justly proud

as a profession. One is the perfection of the technical part of our art, the improvement of methods of operation, the invention of new instruments, the elaboration of sutures and suture materials, and the extension of surgical procedures to every process of disease, from defective cerebral development to endocarditis. The other is the clearing up of the origin and causes of surgical diseases, the less brilliant but more thoughtful study of processes by the bedside and in the laboratory, the linking together of diseases in a coherent scheme, the investigation of the philosophy of pathological action and its relation to physiology. Both are necessary to progress, but the former alone produces the "mere operative surgeon," as one of our masters in surgery terms him, the instrument-inventor and namer, the "button-maker," the fee-collector; while upon the latter only can be based true progress, permanent and rational advances, broader knowledge, and that nobler type of the surgical mind, that of the true fathers of the art, who are thinkers rather than operators, and philosophers as well as pathologists.

VERY soon after the profession of London had received definite proof of Dr. Jenner's great discovery, proffers were made to him to take up his residence at that city. It is reported that Mr. Cline urged him to settle in London, promising him an income equivalent to $50,000 per annum as the result of his practice. To this, however, his deliberate reply was: "Shall I, who, even in the morning of my days, sought the lowly and sequestered paths of life, the valley, and not the mountain; shall I, now my evening is fast approaching, hold myself up as an object for fortune and fame? My fortune, with what flows in from my profession, is sufficient to gratify my wishes; indeed, so limited is my ambition, and that of my nearest connections, that, were I precluded from future practice, I should be enabled to obtain all I want. And as for *fame, what is it? A gilded butt, forever pierced with the arrows of malignancy.*"

BEFORE the Medical Club of Vienna, Dr. Herz has recently introduced the subject of the nail-pulse which has recently been advocated in many quarters as a more delicate method of diagnosing morbid conditions of the circulation. For a long time the sphygmograph was the only instrument in which we trusted for hematic information. This was succeeded by the plethismograph; later, Ruedl of Bern, introduced the flammentachygraph, and now we are confronted with the onychograph as the most delicate instrument for hematic curves, as it faithfully exhibits the movements in the capillary vessels. When the capillary arteries and veins contract, the instrument shows a low curve; when dilated, the pulse curve is high. From this curve, with the assistance of the respirations, the condition of the brain can be presumed. In the case of icterus the capillaries are dilated. This state is also present during the rigors of malaria, as well as in aortic insufficiency. In mitral defects a nail-pulse could not be obtained. The instrument can unhappily only determine the condition of the capillaries in the digits.

A PICTURE of Mentone, as it was forty years ago and as it is now, is thus presented by the *Medical Press and Circular*: "At that earlier date Mentone was a happy village in France, where lived peasantry happy on their farms and in their superb physical state, conditioned by the climate. It was discovered that the region was a most healing one for consumptives, and it became the Mecca for the unfortunates of Europe so stricken. The inhabitants abandoned their farms to wait upon the strangers. The strong healthy women forsook their dairies and became the washerwomen of the consumptives' clothes. No precautions were taken; the disease was not then understood as now, the theory of the tubercle bacillus not having been discovered. The place to-day is bacillus-ridden, a pest hole, death itself. The hitherto strong inhabitants are emaciated, a coughing, bleeding people, filled with the germs of consumption. The soil and air are both contaminated with the tubercle bacilli. It is no longer a health resort." The same fate, it is believed, awaits many other similar localities unless active measures are taken to destroy all germs. This will be a most difficult task, because consumptives themselves, as a rule, are not thoughtful of the danger they spread, or of the rights of others. They should bear in mind that if all others had been careful, they, too, might have escaped.

A PETITION, signed by nearly two hundred members of the Society of Medical Phonographers, including the names of Lister, Wilks, and Heath, has been presented to the General Medical Council of England. This is a request that shorthand should be an extra optional subject for the preliminary examination of students applying to this Council. The evident utility of shorthand in the duties of a student, as well as a practitioner, makes it an almost indispensable aid.

THE LIVERPOOL LADIES' CHARITY AND LYING-IN HOSPITAL is now without a medical staff, and from the unanimous determination of more than two hundred professional men of Liverpool and its vicinity to resent the indignities heaped upon a former staff by the managing board of this hospital, none will soon be secured. If we are correctly informed, the difficulty arose over the instruction of midwives in the institution. Over these the medical staff were to exercise no control, and were expected to handle no obstetrical case unless it proved too complicated for these novices, the latter remaining in charge and accepting service, as it were, from the surgeons.

THE extremes to which some of the London hospitals have gone in forcing their claims for contributions on Hospital Sunday has brought severe criticisms upon them. Street soliciting, with the circulation of boxes, was bad, but processions and parades were apparently more than the public could endure.

THE EPIDEMIOLOGICAL SOCIETY OF ENGLAND has expressed its determination to found a medal in honor of Jenner, to be known as the Jenner Memorial Medal. It is to be awarded to persons who shall add to the knowledge of epidemiology and preventive medicine.

CHARLES S. LEACH, M.D., an English missionary, resident at Sfax, in Tunisia, North Africa, has been mur-

dered, together with his wife and a five-year-old son. His little daughter of two years was spared. Dr. Leach and his wife, who had previously been laboring in Algeria in connection with some American friends, joined the North Africa mission early in 1891. In the summer of that year they removed to Tunis, and after a time of Arabic study, with the assistance of other missionaries, began a medical mission there. A few months since, he requested the council of the mission to be permitted to open a new medical mission at Sfax, which is the second largest city in the country, and situated on the coast, about two hundred miles further south. He moved there with his family about the middle of March, and had been mainly occupied since then in getting the house and station into order. He wrote on April 27 that people were asking when he would open the medical mission, and that he hoped in a short time to do so. This massacre, which took place during the first week in May, is as yet unexplained, and well-nigh inexplainable, except on the grounds of mob violence. It would appear that Dr. Leach was on his own premises when the muderous deeds were done.

IN the days of the Republic, the medical profession in Rome was a mere fortuitous concourse of atoms, and it was not till the time of Augustus that it began to have anything like a corporate existence. The process of organization seems to have begun with meetings between the adherents of different medical sects for the discussion of their several doctrines—somewhat on the lines of our societies. These meetings were at first held wherever the disputants could find shelter—in the Temple of Peace, in the Palatine Library, in the gymnasia. In course of time, however, a local habitation and a name were found in the Schola Medicorum, on the Esquiline, which constituted what may be termed an Academy of Medicine, with offices, secretarties, archives, and all the rest of it. The ruins of this Academy were still to be seen in the sixteenth century, and from the descriptions of travelers who saw them, the Schola Medicorum must have been a handsome structure. Of all the paintings and sculptures which adorned it, the only thing that now remains according to M. Maurice Albert, is a mosaic, which is preserved in the Villa Albani. This represents a group of seven physicians, one of whom is probably Antonius Musa.

SOCIETY PROCEEDINGS.

TWENTY-FIRST ANNUAL MEETING OF THE AMERICAN GYNECOLOGICAL SOCIETY, HELD IN NEW YORK, MAY 26, 27, AND 28, 1896.

(Continued.

SECOND DAY—MAY 27TH.

The morning's exercises were opened by the President's address entitled,

TWENTY-ONE YEARS OF GYNECOLOGY AND OBSTETRICS. (SEE PAGE 630.)

by DR. WILLIAM M. POLK of New York.

DR. PAUL SÉGOND of Paris, presented in French a paper upon

THE TECHNIC OF VAGINAL HYSTERECTOMY,

which was interpreted by Dr. Henrotin. He presented vaginal hysterectomy, not as a panacea, but as one method adapted to a certain class of cases. The adominal method was preferable in all cases in which there was doubt regarding the existence of bilateral disease, because it gave opportunity for conservative work. It was extremely important to avoid the abdominal scar, especially in cases of fibroids, on account of the necessarily extensive incision required. All the steps of the operation in the vaginal method should be done under the guidance of the eye. The line of cleavage having been found, it was just as easy to separate from below as from above. In rare instances, it might be necessary to do an incomplete operation, but in these unusual cases the danger arising from excessive manipulation of the bowel counterbalanced the disadvantages of the incomplete operation when done from below. In 600 cases he had not met with a single hernia, hence, vaginal hernia could not be reasonably offered as an objection to this procedure. Dr. Ségond said that in these 600 operations he had wounded the bladder six times. This accident was most liable to occur at the time of the initial incision anterior to the cervix, or just as the operator was about to enter the adominal cavity. By pulling the cervix backward and forward the surgeon could determine the exact limits of the bladder, and by avoiding the use of the lateral retractors, the bladder should not be injured in the subsequent steps of the operation. He used a short retractor, held gently against the anterior face of the uterus. Where the rectum had been wounded, he had found that it healed easily and completely. The ureter was liable to be injured (1) when dissecting back the bladder and anterior vaginal wall; and (2) in the later manipulations for controlling hemorrhage. By making his circular incision, and then a lateral incision, and using care in dissecting up this anterior flap of the vagina, this accident could be for the most part avoided. He required his patients to stay in bed for two weeks, and unless there was some special indication, he did not change the packing for five or eight days. By using the instruments of Péan, and leaving them in position for forty-eight hours, hemorrhage could be ordinarily avoided.

DR. JOHN BYRNE of Brooklyn read a paper upon

THE RELATIVE MERITS OF TOTAL OR PARTIAL HYSTERECTOMY FOR CANCER OF THE CERVIX, BY ORDINARY METHODS, AND SUPRAVAGINAL EXCISION BY THE GALVANO-CAUTERY.

He said that one could hardly fail to be impressed with the gravity of vaginal hysterectomy after having witnessed its performance. He was of the opinion that it would have been better for women had the statistics of Price, Eastman, and others never seen the light of day. In studying the statistics of the subject under consideration in his paper, he had been struck with the very varying reports regarding primary mortality. In 1273 colpo-hysterectomies by 38 surgeons, the average primary mortality

was 14.6 per cent., and this, too, among expert operators. In the course of three years, 163 vaginal hysterectomies for cancer had been done in a single institution, yet at the end of three years only 25 per cent. were alive. Of these, 40, or 12 per cent., were said to be free from any recurrence of the disease.

Dr. Byrne then presented the results of his own experience in the treatment of cancer of the cervix by supravaginal excision performed with the galvano-cautery knife. Of forty cases that he had been able to keep under observation, the average period of immunity from recurrence was nine years. A most unpromising case had been operated upon twenty-one years ago, and was still in perfect health. He claimed the following advantages for his method: (1) Exemption from traumatism of parts supposed to be healthy; (2) an almost complete annihilation of the primary mortality; and (3) prolonged immunity from recurrence.

Dr. R. S. Sutton said that all surgeons occasionally met with what appeared clinically to be undoubted cancer of the cervix, and yet microscopical examination failed to confirm this diagnosis. According to his experience, when the diagnosis of cancer was beyond question, the disease recurred comparatively early, and he doubted if it made any difference whether the operation were done with the knife or with the galvano-cautery. The Paquelin was much more rapid in its action.

Regarding the treatment of fibroids, he would say at the present time that he preferred, in the case of small fibroids, to do an anterior colpotomy, enucleate the fibroid, and, whenever possible, return the uterus to the pelvic cavity.

Dr. J. E. Janvrin said that the discussion of cancer of the uterus had been limited by the author of the paper to cancer beginning in the cervix—only about one-fourth of all cases of uterine cancer. In a paper which he had prepared last winter, he had stated his ultimate results in sixteen cases to be 33⅓ per cent. absolutely cured, having been free from recurrence for periods varying from a little over three years to twelve years. As a rule, cancer patients suffer much less from the recurrences than from the primary disease.

Dr. W. H. Wathen of Louisville said that vaginal hysterectomy could often be done without any retractors, and it was seldom that more than one was needed. Where the disease was unilateral, it seemed to him that there was less danger and mutilation from the vaginal operation.

Dr. H. A. Kelly said that it was not possible by the vaginal route to decide as carefully regarding what structures could be saved. Carcinoma demanded such extensive dissection, that he thought abdominal section was the only effective method of dealing with this condition. He could see only one distinct advantage of the vaginal method, and that was that it was less dangerous if the aseptic technic were faulty.

Dr. Ernest Cushing said, that as the only two cases in which he had injured the ureters in the vaginal operation had been those in which the accident was attributable to the careless use of retractors, he was prepared to endorse what Dr. Ségond had said on this point. Where a patient was much exhausted by sepsis, and a collection of pus was readily accessible through the vagina, this was the proper route to select. He would not do the vaginal operation for the relief of disease of the appendages if the uterus were adherent.

Dr. Mann said that the selection of the route in cases of cancer should depend upon the exact site of the disease. The experience of many surgeons of repute had demonstrated that in cases of cancer of the cervix better work could be done by the abdominal route. In these cases, a very extensive dissection was required—such as could only be well done by abdominal section.

Dr. Thaddeus Reamy of Cincinnati, remarked that the arguments of Dr. Kelly on this subject appeared to him to be decidedly fallacious.

Dr. A. Palmer Dudley of New York, said that in Jacobs' method of operating through the vagina, it was necessary to use a retractor in order to prevent burning the tissues with the cautery. Where it seemed necessary in cases of uterine cancer to make the extensive dissections referred to by Dr. Kelly in order to remove the disease, it was his opinion that the patient was better off if left alone without operation.

Dr. Bache Emmet exhibited a special clamp he had devised to facilitate work which could not be done under the guidance of the eye. This clamp had long jaws, and by merely bringing together the distal ends of the blades, the latter were locked.

Dr. Florian Krug of New York, contrasted the discussion of to-day with that occurring two years ago. He said that in the present discussion he had not yet heard a dissenting voice regarding the propriety of removing the uterus in suppurative disease.

Dr. Ford of Utica, said that there were still some surgeons living who favored conservatism as regards the uterus. He was glad to see that the practice, originally advocated by Ségond, of extirpating the uterus in order to gain easier access to the diseased adnexa, had not found favor in this country.

Dr. Henry C. Coe of New York, said that he had become a pessimist regarding the treatment of malignant disease. It was well known that, even after the most radical and extensive operations for the removal of carcinoma of the breast, nodules of suspicious structure could be found by the microscopist beyond the supposed limit of the disease, and that in these nodules the disease recurred. Dr. E. C. Dudley had advocated the use of clamps in operations for malignant disease, on the ground that the resulting sloughing process destroyed groups of cells beyond the line of incision. If this were true, it was easy to believe that Dr. Byrne's method of using the galvano-cautery did possess a decided advantage over the use of the ordinary knife.

Dr. S. C. Gordon said he was in the habit of doing the vagino-abdominal operation in cases of carcinoma of the uterus, for the reason that he could more easily remove the vaginal portion of the cervix by the vaginal route. Regarding the operation for fibroids, he still maintained that the abdominal operation was the better

one. He could see little enough, he said, by that route, but much more than by the vagina.

DR. BAER of Philadelphia, said that if he could believe that the uterus was seriously diseased when there was extensive disease of the appendages, he would probably operate through the vagina, and extirpate the uterus, but as he could not convince himself of the correctness of this view, and as he considered it important to retain the cervix, he adhered to the abdominal operation.

DR. J. M. BALDY of Philadelphia, said that so far the only objection made to the abdominal route was the abdominal scar. Against this disadvantage he would place the shortening of the vagina resulting from vaginal hysterectomy. He had known it already to be the cause of much domestic unhappiness. The report from Dr. Ségond showed that the bladder, bowel, and ureters were much more frequently injured by the vaginal than by the abdominal route, and certainly in hands less skilled than those of Ségond these injuries to the bowel gave rise to serious consequences.

DR. HOWARD A. KELLY of Baltimore, read a paper upon

VAGINAL PUNCTURE AND DRAINAGE FOR THE TREATMENT OF EXTRAUTERINE PREGNANCY RUPTURED IN THE EARLY MONTHS.

At a meeting of the Johns Hopkins Hospital Medical Society, October 23, 1893, he had advocated the treatment of ruptured extrauterine pregnancy by a vaginal opening for the removal of the products, followed by drainage. His first case was operated on October 27, 1892, and was one of the intraligamentary form. An exploratory celiotomy was done, and a mass was found on the right side, 14 x 10 cm. in size, to which the whole omentum was adherent, dragging down the transverse colon; there were also dense adhesions to the small intestines. The uterus lay to the left. The peritoneum at the pelvic brim posteriorly passed directly on to the sac without dipping into the pelvis, but anteriorly and laterally it was lifted up by the sac to such an extent that it was reflected onto the abdominal wall 4 cm. above Poupart's ligament. A complete enucleation of this subperitoneal mass was out of the question, so drainage, extraperitoneally above Poupart's ligament, was determined upon. The colon was set free by tying off the entire omentum from side to side. A free incision was made into the sac above Poupart's ligament and 60 cc. of fluid blood and 240 cc. of clots were removed. The sac was washed out and drained with gauze. There was no marked hemorrhage. The duration of operation was thirty-seven minutes. The patient made a good recovery leaving hospital on thirty-second day.

The next case was operated on February 22, 1893; the third one is reported in the *Johns Hopkins Hospital Bulletin*, for November, 1893. He has had in all thirteen cases treated by vaginal puncture, and drainage with one death not attributable to operation, and without any untoward sequelæ.

Vaginal puncture and drainage is suitable for all cases of extrauterine pregnancy ruptured in the early months, therefore, to the vast majority of cases.

Vaginal puncture and drainage is not suitable: (1) In an unruptured extrauterine pregnancy. (2) advanced extrauterine pregnancy. (3) In a recently ruptured extrauterine pregnancy.

He does not compare the operation with the removal of a dead fetus per vaginam in an advanced extrauterine pregnancy (elytrotomy), nor to cases in which suppuration of the sac has taken place. He reported only one suppurating case, and included that simply to give all his cases treated by the vagina. Method of performing the operation: (1) Careful vaginal and rectal examination to fix exact relation of sac to vaginal vault and rectum. (2) Position of patient, lithotomy posture. (3) Fixing cervix with tenaculum forceps in posterior lip. (4) Opening the sac with scissors. (5) Emptying sac of contents by dilatation of opening, and the careful use of index and middle fingers in removing *debris*. (6) Washing out the sac. (7) Gauze drain fitting loosely.

He leaves the gauze drain in for three or four days, and then gradually withdraws it up to the fifth or seventh day. The sac closes in from two to six weeks, without any marked suppuration.

In four out of the thirteen cases he opened the abdomen before evacuating and draining the sac, by the vagina, in three of them, and above Poupart's ligament in the other. He opened the abdomen in the first two cases, expecting to be able to enucleate the mass in that way, but finding that impossible, he turned to the vaginal route. With his present technic he rarely finds it necessary to open the abdomen at all. He did this, however, in the last case but one, No. 12, because the history of rupture was so negative, that he was doubtful whether he had a ruptured or an unruptured sac to deal with.

Advantages of this operation: The greatest advantage of this method of treatment is, that none of the pelvic structures are removed, while the sac is opened and drained, in accordance with the most recent advances in gynecological technic. A further advantage is, that a serious abdominal operation is avoided and the adhesions walling off the sac are let alone. Several of his patients were so reduced that they could never have survived an abdominal operation.

Dangers of operation: (1) The possibility of a mistake in the diagnosis. (2) Risk of opening the peritoneum. (3) Fatal hemorrhage. (4) Prolonged suppuration of the sac.

Although he made a correct diagnosis in these thirteen cases, he once diagnosed a dermoid cyst as an extrauterine pregnancy, and one a pelvic abscess; he opened and drained both cases, and both recovered. Hemorrhage is the most serious risk incurred; and in one case he had to open the abdomen and extirpate the sac to stop it. The operator, to avoid this accident, ought always be prepared to open the abdomen.

A careful record of his thirteen cases has been prepared by Dr. J. E. Stockes of the Johns Hopkins Hospital, and will appear in the Transactions of the American Gyncological Society.

DR. FERNAND HENROTIN of Chicago, then read a paper upon

TREATMENT OF EARLY RUPTURE OF EXTRA-UTERINE PREGNANCY.

Confining his remarks to a consideration of those cases only in which rupture took place prior to the second month. He divided the cases into classes, viz.: (1) Those in which the rupture is complete, and is associated with free, primary, abdominal hemorrhage; and (2) those in which there is an incomplete rupture into the broad ligament. Prior to the seventh week, the diagnosis of complete primary rupture was that of intra-abdominal hemorrhage. In some of the acute cases it is impossible to remove all the blood from the peritoneal cavity. If there were no evidence of sepsis, only the large clots need be removed, but where sepsis was present, the cleansing of the cavity should be as thorough as was consistent with the condition of the patient. In making the diagnosis, it should be remembered that in free and uninterrupted hemorrhage, the woman remains conscious after the first swoon, and, unlike the fainting woman, her face is constantly blanched. Again, the pains of rupture were more likely to occur in distinct attacks, leaving the patient well in the interval. In tubal abortions, he would expect the pains to recur at short intervals up to the escape of the ovum. If a woman were to suddenly and unexpectedly become faint, and in spite of proper treatment, rapidly pass into collapse, the diagnosis of rupture of an extra-uterine pregnancy and free hemorrhage into the cavity is almost certain. True surgery demanded an immediate ligation of the bleeding point. Such an operation could be performed in a very few minutes, and while it was being done, an assistant might be performing saline infusion. In bad septic cases where the condition of the patient was so bad that there was no time for a thorough cleansing of the cavity, a gauze drain might be inserted.

Dr. H. J. Boldt of New York, said he did not think the treatment advocated by Dr. Kelly in his paper would have many advocates. In one case in which he had performed vaginal puncture, the hemorrhage had been very serious. Nor did he think that many surgeons would agree with Dr. Henrotin that it was proper to operate during shock. He had been interested in the differential diagnosis, as laid down in that paper, but it could hardly be considered as absolute.

Dr. Wathen said he was of the opinion that Dr. Kelly's treatment was the proper one for the special class considered, and he had himself practised it with satisfactory results. He hoped that now Dr. Kelly would become a convert to the vaginal operation for pus cases. In cases in which the hemorrhage and shock were so severe that a laparotomy would jeopardize the patient's life, the surgeon could make an opening in Douglas' pouch.

Dr. Mann said that his experience with the vaginal treatment of these cases had not been so fortunate as Dr. Kelly's. In one case, after having removed the fetus and placenta, there occurred a frightful hemorrhage, which eventually caused the woman's death. The autopsy not only disclosed an enormous sac, which it would have been next to impossible to have effectively packed to control the hemorrhage, but also, on the other side, the remains of another gestation sac, showing how effectually nature had done her work in the first instance.

Dr. Charles P. Noble said that a suppurating hematocele was best dealt with through the vagina, but he would hesitate to resort to this route in any but old cases, on account of the danger of severe hemorrhage. He had operated upon five tubal abortions, and in these, the description of Dr. Henrotin for primary abdominal hemorrhage found its counterpart. A strong argument against the vaginal method was that the ovum might be left in the tube to excite another hemorrhage.

Dr. A. Lapthorn Smith said he was sorry that such a brilliant abdominal surgeon as Dr. Kelly should waste his talents on the vaginal route. Personally, he would be utterly dismayed if required to operate upon a case of extrauterine pregnancy by the vaginal route.

Dr. Baer referred to a case of extrauterine pregnancy, in which a sudden and exceedingly severe hemorrhage occurred. He felt sure that had he been operating on this case through the vagina, the woman must have certainly lost her life before he could have opened the abdomen and controlled the bleeding. He had rarely operated upon patients until they had recovered from shock, and he had never seen a case of extrauterine pregnancy die from the hemorrhage.

Dr. J. E. Janrin said that as long ago as 1867 Dr. Stephen Rodgers of this city, had recommended an exploratory laparotomy in cases of hemorrhage from the uterine adnexa, and Dr. Henrotin's remarks were, therefore, but confirmatory of what had been recommended so many years ago. He had successfully operated in a number of cases in which the hemorrhage was still in progress, but never upon a patient *in extremis*. Having observed a case of fatal hemorrhage from a vessel on the surface of a gestation sac, he had been led to operate, and with success, in several cases in which there were symptoms of hemorrhage, but in which rupture of the tube had not yet occurred.

Dr. S. C. Gordon said that a fairly large experience with this class of cases seemed to justify him in the belief that it was not necessary to operate during collapse. He was not as much afraid of these women dying of hemorrhage as Dr. Henrotin seemed to be.

Dr. Ashton said that the object of operating in these cases was to control the hemorrhage, and as this could be more quickly done by abdominal section, he preferred that method. Moreover, the irrigation of the vagina with hot water was in itself enough to aggravate the hemorrhage.

Dr. Johnstone said that as the danger seemed to increase with each successive attack of collapse, the importance of prompt operative interference in cases giving a history of two or three previous attacks was apparent, General surgeons made it a rule not to operate during shock, if it could be possibly avoided, and the same rule should apply to gynecology.

Dr. Watkins described a number of cases in which he had done the vaginal operation, and laid stress on the fact that in six of them the patient's condition was so bad that it was hardly probable that she would have survived an abdominal operation.

DR. ANDREW F. CURRIER of New York, said that the majority of persons would die if operated upon during shock. If the symptoms present were those of shock and hemorrhage, it was not of much importance whether the diagnosis was ruptured ectopic gestation, or ruptured ovarian cyst.

DR. J. TABOR JOHNSON said that it seemed unsurgical to endeavor to resuscitate a person from shock while the hemorrhage was still in progress, because the measures recommended for establishing reaction from shock were the very ones which would tend to aggravate the hemorrhage. There had been a number of cases reported in which patients had died while the surgeon was waiting for reaction from shock. It seemed to him that the only cases suitable for the vaginal operation were those formerly spoken of under the name of pelvic hematocele.

DR. HENROTIN said that it seemed to him that if there were anything which should not be operated on through the vagina, it was an extrauterine pregnancy. The mistake was sometimes made of making an opening from below simply because a large, boggy mass was felt through Douglas' pouch, but this was a very dangerous procedure, for if there was no limiting sac and bleeding was still in progress, the woman might lose her life from hemorrhage. It was safer in these cases to operate from above. The speaker said that an experience of sixteen years in general surgery had taught him that it was not always necessary or wise to wait for shock to pass off before operating. Of course he would not operate upon a patient already so low as to exhibit that great restlessness so characteristic of approaching dissolution. The shorter the time between the onset of the attack and the occurrence of severe collapse, the more prompt must be the effort made to check the hemorrhage. He was thoroughly convinced that by the method given in the paper, one could, in a large proportion of cases, differentiate between a woman who was simply in a swoon, and one who was in collapse from excessive hemorrhage.

DR. CHARLES P. NOBLE of Philadelphia, read a paper upon

SUSPENCIO UTERI, WITH REFERENCE TO ITS INFLUENCE UPON PREGNANCY AND LABOR.

He said that experience had shown that while this operation was a very satisfactory one from the standpoint of the gynecologist, it was sometimes responsible for difficulty in subsequent pregnancies or labors. He had met with two cases of obstructed labor from this cause, and in one of these it was necessary to perform a Porro operation. This had led him to make a collective investigation, with the following results: (1) That subsequent pregnancies are usually uncomplicated; (2) that uterine inertia is not infrequent; (3) that serious obstruction to labor may result from the fundus of the uterus being imprisoned at the brim of the pelvis. Of 165 pregnancies reported in foreign journals, as occurring after suspensio uteri, there were seventeen abortions, seven premature labors, and sixty labors at full term. Of the latter, there were two artificial extractions, eight forceps deliveries, five versions, and three Cæsarean sections. There were three deaths, or a mortality of five per cent. Although Kelly had performed nearly one-fourth of all these operations done in America, difficult labor had been reported as following this operation in only one instance. The speaker said that he had become impressed with the fact that the real danger in subsequent labors was chiefly from the hypertrophied fundus and anterior wall constituting a tumor, and so blocking the pelvic inlet. To obviate this, he now made the lower angle of the incision stop an inch and a half above the pubis, and passed the sutures through the anterior, instead of through the posterior face of the fundus. Of the other similar operations, Dr. Noble said that it was now generally conceded that Alexander's operation did not interfere with subsequent pregnancy or labor, while vaginal fixation had been responsible for so many operative deliveries, that it could not be considered as a justifiable procedure in women of the child-bearing age.

Discussion of this paper was postponed to the following day.

THIRD DAY—MAY 28TH.

DR. T. A. EMMET said that as he had found that on shortening the round ligaments, Alexander caused at the same time a prolapse of the uterus, he had never felt justified in doing Alexander's operation. Another reason was that he was able to relieve all these cases by plastic surgery.

DR. G. M. EDEBOHLS of New York, said that Alexander's operation had been found to have no deleterious effect on subsequent pregnancies, but vaginal fixation, although still a young operation, had been followed by an appalling list of complicated labors. Ventral fixation occupied an intermediate place. Among his cases of ventral fixation there had been eight subsequent pregnancies, and two deaths, but neither of these two deaths was in any way attributable to the operation. The lower the attachment of the uterus and the more secure the fixation, the better the result from the gynecological standpoint, but the worse in case of subsequent pregnancy. Probably the best way was to attach the uterus squarely by the fundus, and to fasten it to the abdominal wall where it would naturally rest without dragging on the lower attachment.

DR. KELLY said that, being the originator of this operation he had taken a special interest in the collective investigation, and had himself sent out 125 letters of inquiry. By this means he had heard from forty-six married women who had been operated upon by suspension of the uterus. Among these women there had been thirteen pregnancies, with only one difficult labor, and this case was one of his earlier operations, and as a result of sloughing, a very extensive adhesion had formed between the uterus and the abdominal wall. The adhesion here ordinarily consisted only of a long and delicate fibrous band, which suspended instead of fixing the uterus. Such a uterus had all the natural movements, but could not be retroverted. He considered the best technic was that which he had at first recommended, and which he had employed in about 250 operations with satisfaction. Two silk sutures were passed in the peritoneum and through the uterus, just posterior to the

ridge at the top of the fundus. Although he had fixed the uterus low and posteriorly, the fixation had not been firm.

Dr. A. Lapthorn Smith said that he had done the operation according to Dr. Kelly's method fifty times, and the only trouble from subsequent pregnancy had been one abortion at the fifth month. He thought Dr. Kelly's suggestion of taking in less of the abdominal wall would probably avoid further trouble. He had done ventral fixation in cases of extensive disease of the appendages with firm adhesions, and had been surprised to find that many had been relieved entirely of their symptoms by simply the elevation of the ovaries and tubes.

Dr. Ashton said that the statistics regarding the results of suspensio uteri were valueless because of the many different methods that had been employed. The object of the operation should be to suspend the uterus and tilt it somewhat forward, which could only be done by taking advantage of the peritoneal attachment of the new adhesion. In two secondary operations, he had found, by direct inspection, that the adhesions were slender and about two inches in length. He had never been able, as had Dr. Emmet, to cure all these cases by plastic surgery and the use of pessaries.

Dr. Henry D. Fry of Washington, D. C., referred to the case of a woman who had had ventral fixation performed on her when she was about one month pregnant. Pregnancy was not interfered with, and her attending physician had told him that she had been delivered of a living child, weighing 6½ pounds, after a labor of only a few hours. He had recently himself performed ventral fixation on a woman about ten weeks pregnant, because of an incarcerated uterus, yet so far pregnancy had gone on uninterruptedly. Dr. Fry said he thought in considering the statistics of ventral fixation, account should be taken of the length of time that had elapsed after the operation before pregnancy supervened. This factor should exert considerable influence, for naturally there would be less liability to interference with labor if sufficient time had passed to allow of the formation of a slender band of adhesion.

Dr. Noble, in closing the discussion, took exception to the statement of Dr. Edebohls, that the lower and the firmer the attachment of the uterus in the operation of suspensio uteri the better the anatomical and therapeutical result. The very fact that the uterus was fixed, made its condition abnormal. The term "suspension" better described the operation than did "fixation."

Dr. Edward P. Reynolds of Boston, read a paper upon

SOME ASPECTS OF URETERITIS IN WOMEN.

After a brief consideration of the etiology of the disease in general, the writer states that in his experience the majority of cases of ureteritis have been dependent upon an altered condition of the urine, associated with renal insufficiency, and that this paper is confined to a consideration of this class of cases of ureteritis only. The chronic and acute stages of the disease, although essentially the same affection, are treated in separate sections of the paper on account of the marked difference in the clinical pictures which they present.

Chronic Ureteritis.—The characteristic symptomatology of this affection consists in an increased frequency of urination which is increased by the erect posture, but not wholly relieved by recumbency, the necessity of rising during the night for the purpose of micturition being always present in the writer's experience. With this frequency of mictruition is associated a bearing-down pain which is especially aggravated by standing, and relieved by rest in bed. These two symptoms may be due to other pelvic lesions, but should always excite a suspicion of ureteritis. The physical signs of the disease are limited to a complaint of tenderness and usually of a desire to urinate, on compression over the affected end of the ureter or ureters. In addition to this, examination of the bladder usually shows alteration in the appearance of the ureteral orifice, and often in the neighboring mucous membrane of the bladder. In eight consecutive cases of unilateral ureteritis, catheterization of the ureters has shown a decrease of urea from the affected side. The writer thinks it probable that the urine in renal insufficiency may contain irritant substances which are the result of imperfect metabolism and that in unilateral cases, the one-sided ureteritis not improbably bears a resultant relation to the relatively increased renal insufficiency upon that side.

Treatment is divided into palliative and curative methods. The palliative methods are applicable only to cases in which painful micturition is dependent upon ulcerations or localized inflammations of the vesical mucous membrane in the neighborhood of the ureteral orifice. The writer recommends a carefully localized application of the solid nitrate of silver to such inflammatory surfaces. The curative treatment is hygienic and medicinal. It consists of the ingestion of a large amount of water, accompanied by an alkaline diuretic, a bland, nutritious, and largely albuminous diet, restricting the use of most of the more highly flavored vegetables, and absolutely interdicting all strawberries and asparagus. To these measures should be added massage, or light, gentle exercise. The only drugs which the writer has found of value are the so-called alteratives, preferably small doses of mercury, potassium iodid, or mercury and iodid mixed, which act upon the ureteritis, presumably by improving the general metabolism of the body.

Acute Ureteritis.—This is a frequent, though not dangerous affection, which is probably often mistaken for severe intestinal colic, for renal stone, catarrhal appendicitis, or catarrhal salpingitis. It appears as a sudden attack of abdominal pain, which is usually marked upon one side and slight upon the other. It is distinguished from the other affections mentioned by the fact that its tenderness moves steadily downward through the attack, beginning at the pelvis of the kidney and ending in the vesical portion of the ureter. The abdominal tenderness is often easily overlooked on account of its close localization to what the writer calls the three cardinal points in acute ureteritis; the first of which, characteristic of the beginning of the attack, is situated over the kidney and its pelvis; the second, characteristic of the middle portion of

the attack, is identical with McBurney's point, or its fellow upon the other side, *i.e.*, situated half-way between the umbilicus and the anterior superior spine of the ilium; the third is situated about an inch above the middle of Poupart's ligament. Until the time when this last-mentioned tenderness appears, vaginal examination is negative, but at this time, tenderness, and usually swelling of the vesical end of the ureter, can be detected by the finger. The urine is not always characteristic; but occasionally shows crystals of uric acid and calcic oxalate in an otherwise limpid urine.

The affection tends to a recovery; without treatment, it probably ends in the chronic form of the disease, but with treatment similar to that of the chronic affection, is usually completely thrown off.

The paper closes with a report of two typical cases, one of chronic, the other of acute ureteritis, which are quoted as illustrations of the ease with which mistakes in diagnosis can be made.

DR. HERMAN J. BOLDT of New York presented a paper upon

IMPLANTATION OF THE URETER IN THE BLADDER.

He said that among the causes leading to the production of uretero-vaginal fistulæ, the most frequent at the present time is probably vaginal extirpation of the uterus. Formerly difficult parturition was the most prolific source of this malady. It is liable to occur relatively oftener in the hands of experienced operators than in those of less experience, because the former are apt to undertake more difficult cases, especially when operating for cancer. A case of fistula was reported in which he adopted ureterocystotomy. The abdomen was opened and by the guidance of a ureteral catheter the lower segment was safely dissected out of its adhesions. The bladder was now filled about two-thirds full of sterile water to assist in selecting a site for implantation. The bladder was then evacuated, an opening made in the bladder and the ureter drawn through by means of forceps inserted through the urethra. Three fine silk sutures were passed to retain the ureter in place. Recovery was uneventful and the operation a success. The sacrifice of a kidney for the abolishment of a fistula should be a last resort.

DR. MANN thought that the curious difference in the quantity of urea excreted by the two kidneys in cases of ureteritis might be explained by reflex action. It was important to note that the symptoms of ureteritis were due to the irritation of the mucous membrane of the bladder adjacent to the orifice of the inflamed ureter. He had learned from experience that treatment of this vesical mucous membrane by applications of nitrate of silver would relieve the symptoms of ureteritis. Personally, he would hesitate to resort to treatment of the ureter by the use of bougies or irrigations, owing to the great danger of producing traumatism and of causing infection. The majority of cases of ureteritis were certainly chronic, but, as had been stated in the paper, acute cases were sometimes encountered. When these latter were due to lithemia, the true condition was often overlooked, and the pelvic pain attributed to other causes than the true one—the passage of irritating urine through the ureters. He had not had his attention directed before this to the special points of tenderness. Without the employment of measures for improving the general health, *e.g.*, plenty of exercise, and the free use of water internally, it would be difficult, if not impossible, to effect a cure.

DR. E. P. DAVIS said that he had met with certain abnormal conditions of the urine which had proved most obstinate to treatment until he had discovered that they were produced, or kept up by chewing tea-leaves.

DR. A. LAPTHORN SMITH said that ureteritis was a common affection among women, and in his opinion, was a local disease due to an abnormal condition of the urine. Deficient oxygenation would cause the formation of irritating by-products, such as uric acid and oxalic acid. The patient should be made to take sufficient exercise, avoid excessive eating, and drink at least two quarts of water daily.

DR. REYNOLDS, in closing, said that there was a great danger of making false passages by attempts at exploring the ureters by means of rigid instruments.

DR. EDWARD P. DAVIS of Philadelphia read a paper entitled

INTESTINAL BACTERIA AS A SOURCE OF INFECTION COMPLICATING OBSTETRIC OPERATIONS, WITH REPORT OF CASES.

The first case described was that of a young colored girl who had a contracted pelvis, and who was admitted to the Jefferson Maternity so late in pregnancy that the induction of labor was not admissable. The patient's general condition was good, with the exception of obstinate tympany and distention of the upper portion of the abdomen. She came into spontaneous labor after her bowels had been repeatedly moved by laxatives. As the fetus failed to engage in the pelvis, and as the vagina and vulva were small and ill-developed, the patient was delivered by celio-hysterectomy, a living child being born without difficulty. The stump was treated by the intrapelvic method. There was no hemorrhage nor shock. The patient developed, within forty-eight hours, excessive distention of the small intestine, and vomiting. The bowels moved, and the stomach was washed out with but temporary relief. A clinical diagnosis was made of infection by the bacillus coli communis. Efforts to remove the obstruction to the bowel failed, and the patient died. Autopsy showed multiple ulcers of the small intestine, with lymphangitis of the peritoneum and exudate compressing the bowel. Bacteriological examination showed pure growth of the baciilus coli communis, with micrococcus pyogenes albus. Intestinal ulcers were demonstrated by culture examination to have been the point of infection. The incision had healed by first intention, and the stump was healing.

CASE II was that of a Polish woman whose pregnancy was remarkable for profound melancholia and sleeplessness. She had a normal pelvis, and her labor, although tedious and difficult, was successfully terminated by forceps. She bore a large, living child which survives. She had been unusually excitable before labor, and at the time of delivery her temperature was 101, her pulse 120. She speedily developed a high temperature and rapid

pulse, with acute mania. The uterus and genital tract were thoroughly antisepticized without result, Symptoms of puerperal septic infection were absent. The patient endeavored to leap from the window of her room, and attacked one of her nurses. She refused food, and was fed by a stomach tube. Prolonged sponging, bathing, and packing, the use of sedatives, forced feeding and stimulants, had little effect upon her case. She died comatose eleven days after delivery. On *post-mortem* examination, a congenital abnormality of a loop of large intestine in the center of the abdomen was found. This contained masses of partially dissolved feces. The genital tract showed no evidences of infection. These autopsies were made by Dr. Bevan, of the Jefferson Hospital, who has observed in three hundred autopsies at the Philadelphia Hospital eighteen cases of this anomalous loop in the intestine. Fourteen of these patients were insane, or had been at some previous time. Two committed suicide; two were brought into the hospital unconscious, dying of toxemia. In the case reported, the bowels had been thoroughly moved by mercurials and salines. Examination of the blood showed no septic bacteria, but molecular disintegration of corpuscles. A clinical diagnosis of acute puerperal mania was made, while autopsy gave as a cause of the mania chronic toxemia from absorption of bacteria and ptomaines from an abnormal loop of the large intestine.

A colored illustration of the intestinal ulcers in CASE I was exhibited.

DR. R. A. MURRAY recalled two or three cases in which he believed the symptoms of toxemia that were present had been dependent on such an intestinal infection. Such experience emphasized the importance of keeping our patients under observation during pregnancy. In these cases the action of the saline purgatives should be aided by the administration of some "antiseptic cathartic," such as calomel.

DR. GRANDIN said that while he felt sure that he could recall some cases in which, had there been an autopsy held, the same conditions described in the paper would have been found, he felt that a certain danger lurked in this paper, *i.e.*, the danger that many physicians would be content with the diagnosis of intestinal infection when the real condition was puerperal septicemia. The latter diagnosis was disquieting, in that it pointed to his own negligence, or that of some of the other attendants, as the cause. This criticism, of course, did not apply to the cases reported in the paper, for the autopsy was a sufficient confirmation of the correctness of the diagnosis in those particular instances. The lesson to be learned from this very interesting paper was, that the gravid woman should be watched by the physician from the inception of pregnancy to the time of labor.

DR. PHILANDER A. HARRIS of Paterson, N. J., said that he desired to emphasize the fact that modern obstetric teaching had pointed out that very few cases could be accounted for in the way described in the paper.

DR. CUSHING said that the symptoms in the reported cases were such as laparotomists had long recognized as indicative of intestinal infection.

DR. DAVIS in closing the discussion, said that he had presented the paper purely as a clinical study for the thoughtful consideration of expert obstetricians. The clinical picture presented in his cases certainly was not that of ordinary puerperal sepsis. For efficiently cleansing the bowel, it had been recommended to use $\frac{1}{200}$th to $\frac{1}{120}$th of a grain of the bichlorid of mercury internally, several times a day for several days, together with salines.

DR. WILLIAM H. WATHEN of Louisville read a paper upon

TREATMENT OF INTRA-LIGAMENTOUS AND RETRO-PERITONEAL UTERINE FIBRO-MYOMATA.

He said that where the fibroid tumors could be enucleated without excessive hemorrhage, the uterine and ovarian arteries need not be interfered with, but in many cases it was imperative that the uterine arteries should be secured by ligature or clamp before attempting the removal of the tumor or the uterus. He said that in the class of cases specially considered in his paper it would require little more time after the usual preliminary cleansing of the vagina and uterus had been accomplished, to separate the vagina from the cervix, and control the uterine arteries, if possible in continuity near the pelvic wall. The tumor should then be enucleated, and the lower part of the uterus separated from its attachments, after which the abdomen should be opened, and the operation completed from above. Having separated the adhesions, the ovarian arteries are to be ligated close to the pelvic wall, thus cutting off the blood supply to the uterus or tumors. Having next completed the enucleation, the capsule should be sutured in the lower part of he abdominal wound, and the incision closed above.

DR. CUSHING said, that these retroperitoneal tumors usually originated in the cervix, and hence might be below the uterine arteries. He could not see the necessity or desirability of suturing the sac to the abdominal wall.

DR. P. A. HARRIS wished he had known of this method before doing a certain difficult operation a year ago, for he was positive that he could have accomplished it in much less time.

DR. GORDON thought the vagino-abdominal operation often very much easier.

DR. J. TABOR JOHNSON suggested that by continuing the anterior and posterior flaps and making a lateral flap, the dangerous vascular adhesions would be permitted to slip out of the way. The wound could then be closed by a continuous suture. The operation should be suited to the particular kind of tumor.

THE PRESIDENT said that by securing the anterior trunk of the internal iliac, according to the technic of the old operation for aneurism of the internal iliac, one could easily control the blood supply to the field of operation. Experience had shown that there would be an abundant blood supply to the tissues by collateral circulation, notably through the middle hemorrhoidal artery.

DR. HENRY C. COE of New York, presented a paper upon

CÆSAREAN SECTION; SUTURE OF THE UTERUS VERSUS TOTAL EXTIRPATION. (SEE PAGE 601.)

DR. GRANDIN said that where we were dealing with an infected uterus, or one containing fibroids, we were perfectly justified in performing total hysterectomy, but beyond this he could not go. It was not our business to look into the future and ligate the tubes, or take out the uterus because at some future time the woman might become pregnant. Statistics showed that the second Cæsarean section was safer than the first.

DR. GEORGE T. HARRISON of New York, said that it did not seem to him that it was right to remove healthy tubes and ovaries because of possible future complications, but where there was a fair probability that the uterus was infected, it should be removed.

DR. CHARLES P. NOBLE took the same ground as the preceding speakers regarding the ethical question raised, although he would favor extirpation of the uterus if this organ were infected, or if there were so many fibroids present that it did not seem probable that a myomectomy could be performed at some future time.

DR. R. A. MURRAY also took the same ground. We should not, he said, do several operations at once, simply because the abdomen was open.

DR. P. A. HARRIS thought that to remove the uterus simply on the assumption that it had been badly handled before the case came under one's care, was rather too radical.

DR. E. P. DAVIS said that he held it to be the right of a woman who is in a condition where natural delivery is impossible, to demand that further procreation be stopped if this could be done without additional risk. Hysterectomy for this purpose, was a safe operation, and did not interfere with lactation.

DR. H. J. BOLDT said that the last speaker had voiced his own sentiments.

DR. H. J. GARRIGUES of New York denied that a woman had the right to be made sterile, or that the physician's duty was to accede to such a request. He thought that the children had some rights, and that, where a mother was in an advanced stage of tuberculosis for example, the child could be saved from such a maternity.

DR. COE, in closing, said that he had not intended to convey the impression that without the patient's consent he would remove the uterus, just as some years ago many of us had removed ovaries. He did think, however, that in these operations we should look into the future, particularly where the mothers were sickly, and the chances for the children were very poor.

DR. HENRY T. BYFORD of Chicago, read a paper upon

DRAINAGE OF THE STUMP IN ABDOMINAL HYSTERECTOMY.

He described the various methods of drainage that he had adopted in sixty-eight cases. His present method was to sew up the stump with catgut, and drain through an opening in the anterior vaginal wall, just in front of the cervix. Three of his cases had died, and he was convinced that there would have been at least twice as many had drainage been omitted.

DR. G. T. HARRISON remarked that the first person in this country to treat the stump by closing the peritoneum, after a supravaginal myomectomy, was Dr. T. A. Emmet, in 1878. The defect in his technic was the absence of proper drainage.

DR. NOBLE said that after trying various methods, he had come to the conclusion that the careful drainage which Dr. Byford had carefully provided, was unnecessary.

DR. HENRY D. FRY of Washington, D. C., read a paper upon

MYOMECTOMY; FATAL SECONDARY HEMORRHAGE, WITH RISING TEMPERATURE.

He reported a case of myomectomy for fibroids, in which there had been fatal secondary hemorrhage, and the correct diagnosis had not been made because of the steadily rising temperature. The morning after operation the patient's pulse was 76 and her temperature 99° F. The heart action then became rapid and feeble, 140 or 150, and the temperature varied between 100 and 102 or 103°. The symptoms lasted twenty hours, and after death the peritoneal cavity was found to be filled with blood. There was no evidence of infection, and the autopsy showed nothing else to explain the fever.

DR. GRANDIN took the ground that the pulse was a better guide than the temperature, both as to the existence of hemorrhage and sepsis.

DR. J. M. BALDY said that when the temperature became subnormal in these cases of hemorrhage, it was usually too late to help the patient. The pulse was not always a reliable guide, but it was the best we had.

DR. COE also thought the pulse was a fairly good guide to the existence of internal hemorrhage.

DR. A. LAPTHORN SMITH said that a *sudden* increase in the pulse-rate was particularly significant.

DR. BOISE of Grand Rapids said that if after complete recovery from the operation and the anesthetic, the pulse was good, shock could be excluded. If the pulse became more rapid, we must differentiate between sepsis and hemorrhage. In cases of gradual hemorrhage into the peritoneal cavity, the rise of temperature was supposed to be due to the effort of the peritoneum to absorb the blood.

DR. E. P. DAVIS said that the rise of temperature might be explained in this way, or by the occurrence of a slight adhesive peritonitis.

AN ELECTRODE FOR BURNING OFF LIGATURES.

DR. CLEMENT CLEVELAND of New York exhibited an electrode with a platinum loop, which he tied in with his ligature during a vaginal hysterectomy. When it is desired to remove the ligature, the current from a three-cell battery is passed through the electrode, and the ligature liberated. The electrodes being small, light, and flexible, do not interfere with the operation.

DR. J. MONTGOMERY BLADY of Philadelphia read a paper upon

SURGICAL INJURIES OF THE URETER.

He said that uretero-ureteral anastomosis was only applicable to a small proportion of cases, while ureterocystostomy is usually feasible. The danger of immediate obstruction seems to be very great, and secondary obstruction, though possible, had not yet been reported. He

had repeatedly examined two cases with cystoscope since the operation, but had been unable to detect any stenosis of the ureter. Should stenosis follow, it could be more easily detected and treated after uretero-cystostomy. The position of the new opening, high up on the fundus of the bladder, was also a decided advantage, as it protected against infection. If there was a choice between the two operations, the evidence seemed to be in favor of uretero-cystostomy.

Dr. Bache Emmet said that infection of the kidney was liable to occur if cystitis were present, and after either operation he would be afraid of backward pressure and consequent hydronephrosis. It was certainly important to make the anastomosis in a slanting direction.

Dr. Byford thought that from the description of the technic of Kelly's lateral anastomosis, this operation should prove to be the best yet devised.

On motion of Dr. Grandin a vote of thanks was extended to Dr. Henry C. Coe for the efficient services which he has rendered the Society during the six years he has acted as secretary.

The following officers were elected for the ensuing year: *President*, Dr. Chadwick of Boston; *First Vice-president*, Dr. Sutton of Pittsburg; *Second Vice-president*, Dr. Garrigues of New York; *Secretary*, Dr. Goffe of New York; *Treasurer*, Dr. Baldy of Philadelphia.

The Society then adjourned, to meet in Washington, D. C., the last Tuesday in May, 1897.

REVIEWS.

Consumption: Its Nature, Cause, and Prevention, with an Outline of the Principles of Treatment. By Edward Playter, M.D. Toronto: William Briggs. 1895.

Apart from the views which are entertained by the author in favor of the contagion theory of pulmonary consumption, this book is a creditable production. The discovery of the tubercle bacillus led to the almost universal conviction that the etiology of this disease had been forever settled and that its prevention and cure would from this logically and certainly follow. Notwithstanding the fact that there are still many in the profession who, like the author, adhere to this view, numerous events have transpired since then which unmistakably show the fallacy of this position, and in consequence there is growing evidence that professional opinion is rebounding from the extreme ground which it at first assumed. Among the most encouraging signs of this reaction is the fact that there is neither in England nor in Germany an author of any great note or reputation, who has written a special work on pulmonary consumption during the last decade, who fully indorses the contagion theory of the origin of pulmonary consumption. A list of these authors includes the names of Theodore Williams, Douglas Powell, and Wilson Fox, of England; Alexander James, of Scotland, and Brehmer, Dettweiler, and Aufrecht, of Germany. Recent information also indicates that Jaccoud, the eminent French writer on this subject, has revised his earlier views on this subject in the same direction.

The other causes and concomitant conditions of pulmonary consumption which are treated of here are, the lowering of the general health, want of apex expansion, diminished chest capacity (so beautifully brought out by the author's own collective investigation), defective pulmonary innervation, overheated air, heredity, want of sunlight, neglected "cold," dampness, imperfect food supply, and injurious occupations.

As measures of prevention, the author discusses in a very instructive and interesting manner the importance of promoting general health and vigor, of pure air and sunlight, nourishing food, general bathing, comfortable clothing, requisite amount of exercise, avoidance of overwork and excesses of all kinds, sound sleep, general and pulmonary gymnastics, use of cold baths, watchfulness of children who are predisposed to the disease, prevention of infection, and climatic changes. This is by far the most valuable part of this work and its teachings cannot be taken to heart too seriously.

An American Text-book of Obstetrics for Practitioners and Students. By James C. Cameron, M.D., Edward P. Davis, M.D., Robert L. Dickinson, M.D., Charles W. Earle, M.D., James H. Etheridge, M.D., Henry J. Garrigues, M.D., Barton Cooke Hirst, M.D., Charles Jewett, M.D., Howard A. Kelly, M.D., Richard C. Norris, M.D., Chauncey D. Palmer, M.D., Theophilus Parvin, M.D., George A. Piersol, M.D., Edward Reynolds, M.D., Henry Schwarz, M.D. Richard C. Norris, M.D., Editor; Robert L. Dickinson, M.D., Art Editor. With nearly 900 colored and half-tone illustrations. Philadelphia, 1895: W. B. Saunders.

A glance at the galaxy of prominent authors, who have contributed to this work, naturally leads one to expect a valuable literary achievement; but no matter how critically a judge reviews this book, we doubt not that his expectation will be more than realized.

We have rarely seen a book representing the efforts of several writers having a more homogenous character, and after a most critical review, we are forced to the conclusion that this book equals, if not surpasses, any work of a similar character published in this country or in Europe.

As space forbids a detailed review, we desire, before discussing the literary part, to compliment the editor and his able associate, Dr. Dickinson, on the high artistic merit of the work. The book contains about nine hundred artistic illustrations, many of which are original. For the first time, we believe, the successful attempt has been made to carry out systematically the principle to draw all figures to a uniform scale, usually one-third to one-sixth life size.

Parts I. and II. contain the anatomy of the pelvis, the anatomy and physiology of the female generative organs, and the development and physiology of the fetus, all by Piersol. We know that this most important subject is usually passed by the average student as tiresome and

difficult. We are pleased, therefore, to note that he has succeeded in presenting this part in an interesting and, at the same time, thoroughly scientific manner.

The diagnosis, hygiene, and the management of pregnancy are jointly by Palmer and Piersol, while Davis, Etheridge, and Kelly are the contributors to the chapter on the pathology of pregnancy. We wish not to detract from the merit of the other writers if we emphasize the excellence of the chapter on extrauterine pregnancy by Howard Kelly.

The chapter on the physiology of labor, by Dickinson, is well written and beautifully illustrated, while the description of the management of labor, by Jewett, has rarely been equaled, and never excelled. Jewett is the first American author who has given to abdominal palpation the important position which this subject deserves. The mechanism of labor is exhaustively treated by Reynolds, and while not agreeing with him in all points, we do not hesitate to approve of its general excellence. We regret that space forbids more than a passing note to the magnificent contribution of Hirst on the subject of dystocia due to anomalies in the forces of labor. The chapter by Parvin and Schwartz on dystocia, due to accidents and diseases, contains the latest views, and is thoroughly up-to-date. The same can be said of Jewett's contribution to the physiology, diagnosis, and management of the puerperium.

The pathology of the puerperium is by Schwarz, Norris, and Garrigues. In this chapter we wish to mention the magnificent illustrations depicting lacerations of, and the methods for repair of, the perineum, Garrigues has handled the subject of puerperal fever or infection in a masterly way, yet we regret that we find statements in this chapter which are not harmonious with our present knowledge of puerperal fever. We cannot agree with the statements of Garriguez that puerperal fever is communicated by the air, or that a dead rat in the cellar can be the source of infection. If this were true, what would become of the women confined in tenement-houses, which houses are notorious for their bad plumbing, and where occlusive vaginal dressings are rarely obtainable? Yet reports from trustworthy sources prove that women can be delivered in these houses with nearly the same safety as in well-kept maternity hospitals. No, puerperal fever is not communicated through the air, nor does the woman generate the poison in her body; dirty hands and instruments are the sole sources of infection. The prophylaxis, therefore, is clear and simple.

The description of the physiology and pathology of the newborn infant, by Etheridge and Earle, is brief, but lucid. Cameron and Dickinson are the authors of the part on operative surgery, except the chapter on symphyseotomy, which is by Jewett. We have only praise for this part of the book.

The work ends with a chapter by Hirst on celiotomy for puerperal sepsis. This subject is yet in the stage of development, but we doubt if the operation will ever become popular.

In conclusion, we again wish to compliment the editor, his collaborators, and also the publisher, on the excellence of their work. Americans may feel justly proud to call such a text-book of obstetrics their own.

A Text-book of Practical Medicine. By Alfred L. Loomis, M.D., LL.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York; Visiting Physician to Bellevue Hospital, etc. Revised and enlarged, with two hundred and seven illustrations and one chromo-lithographic plate. Eleventh edition; 1134 pages.

The present edition of Dr. Alfred L. Loomis' Text-book was partially revised at the time his fatal illness overtook him. Dr. Loomis' reputation as a teacher of medicine and the place won by his work, which has passed through ten previous editions, make extended comment unnecessary. The Text-book has always been a brilliant exposition of the practice of medicine, particularly from the standpoint of American observation, and this last edition has been revised satisfactorily. The departments of Rhinology and Laryngology and Neurology were revised at Dr. Loomis's request by Drs. Coakley and Fisher. Criticism might be offered to some parts of the work and it might be questioned whether positions taken by the author have not been disapproved; but on the whole Dr. Loomis's book still remains standard.

ANNOUNCEMENT.

THE SECOND PAN-AMERICAN MEDICAL CONGRESS.

The Congress will meet in the City of Mexico on the 16th, 17th, 18th, and 19th of November, 1896.

ENROLLMENT.

Article 1. In order to be properly enrolled, each member of the Congress will pay to the Treasurer thereof in the City of Mexico, the sum of five dollars gold.

GENERAL SESSIONS.

Art. 2. There will be one opening session, one closing, and one intermediate session of a purely scientific character.

Art. 3. The opening session, which will be of a solemn character and presided over by the Supreme authority of the Nation, besides being attended by the members of the Congress, will also be attended by the members of scientific societies, and other distinguished persons who may be invited. The session will be opened with the report of the General Secretary.

This will be followed by a speech of welcome, pronounced by the President of the Congress.

Two members will then speak on scientific subjects, and they will be followed by a speech from the President of the Republic. It is strongly recommended that the scientific speeches should be of short duration.

The intervals between the speeches will be filled up with musical performances.

Art. 4. At the closing session the General Secretary will notify the place designated by the Congress for holding the third meeting.

ART. 5. The Treasurer will present his accounts to the Congress, showing the disbursements made of the funds entrusted to his care.

ART. 6. A scientific speech will be delivered and a short speech by one Representative of each one of the nations attending the Congress.

ART. 7. In the intermediate session four speeches will be delivered on general matters by persons who are highly distinguished in medical science, and who, having been in due time invited to do so, have accepted the commission; one of these speeches being pronounced by a Mexican physician who shall be invited to do so by the Committee of Management.

ART. 8. No discussion will be held in the General Sessions.

SESSIONS OF THE SECTIONS.

ART. 9. These sessions will be held from 9 to 12 A.M. and from 3 to 5 P.M. in the places that may be designated by the Organizing Committee. They shall be presided over by the President of each section, alternating with the Vice-Presidents of each one of the nations that are represented in the respective sections.

ART. 10. The person who may be appointed by the Committee of Organization will be the ex-officio Secretary of each section, and he will fill his post alternately with the Secretaries of the nations who may be represented in the sections; but should the latter not be present their places will be supplied by the President in office.

ART. 11. The President will direct the discussion in accordance with the order of the day and will decide all questions that may arise and that may not be provided for in these regulations.

ART. 12. The ex-officio Secretary will make out the minutes, and for that purpose, besides his own notes, will collect those of the Secretaries who may have acted in the section. He will also collect from the persons who may have spoken the written extracts referred to in Article 19.

ART. 13. All questions relating to the debates which are not provided for in these Regulations will be decided in accordance with general parliamentary practice.

ART. 14. The voting will be by name or by putting the question.

PAPERS, EXTRACTS THEREOF AND DISCUSSIONS IN THE SESSIONS OF THE SECTIONS.

ART. 15. All papers will be presented in writing.

ART. 16. Each author will forward to the Secretary of the Organizing Committee in the City of Mexico and before the first day of August of the present year an extract not exceeding three hundred words of the paper to be presented by him. These extracts will be printed in English, French, and Spanish and will be distributed to the members of the Congress before the session in which they are to be read.

ART. 17. No paper will be announced which is not accompanied by this extract; but the authors who comply with these conditions will have a right to have their work published intact in the Transactions of the Congress.

ART. 18. The reading of the papers in the sessions must not last more than twenty minutes; when the papers are so long that they cannot be read within that time the authors will give extracts from them, either in writing or by speech; but they will be published intact in the Transactions of the Congress and in the language in which they have been written.

ART. 19. The extracts referred to in the preceding article will be delivered at the same time as the papers to the Secretary of the Section to which they pertain.

ART. 20. The members of the Congress who may take part in the discussion in any section will present their speeches in writing at the termination of the sessions to the respective Secretaries of such sections, and they will also be published in the Transactions.

ART. 21. The papers which have been announced for reading in the order of the day in each section will serve as subjects for discussion. In such discussions no speaker will be allowed to speak more than once and for five minutes; but the author of the paper under discussions will be allowed a reply which will not exceed ten minutes.

AUXILIARY COMMITTEES IN THE MEXICAN REPUBLIC.

ART. 22. These committees will be appointed by the Committee of Organization and will be composed of one member for each Local Medical Society, or in their absence, of one physician for every center of population. They will cooperate with the Committee of Organization in promoting the success of the Congress. Said Committees will be appointed during the first months of the present year.

EXECUTIVE COMMITTEE.

ART. 23. In order to form this Committee the Organizing Committee will appoint seven members, including the President, Secretary, Treasurer, and the Mexican representative in the International Executive Committee, and such members will attend to everything relating to the business of the Congress in accordance with the regulations that they may adopt for that purpose.

DR. MANUEL CARMONA Y VALLE,
DR. RAFAEL LAVISTA,
DR. EDUARDO LICÉAGA.

Mexico, January, 1896.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MAY 16, 1896.

May 14th.—Medical Inspector R. A. MARMION ordered as member of the Board of Inspection and Survey, June 3d, and member of Medical Board, Navy Yard, Washington, D. C.

Medical Director W. K. VAN REYPEN, granted three months' leave of absence from June 3d, with permission to leave the United States.

FOR THE WEEK ENDING MAY 23, 1896.

Assistant Surgeon H. D. WILSON ordered to examination preliminary to promotion.

Assistant Surgeon C. M. DE VALIN detached from the Philadelphia Hospital and ordered to Hospital Chelsea.

Assistant Surgeon E. M. SHIPP detached from the U. S. R. S. "Vermont" to the U. S. S. "Monongahela."

THE MEDICAL NEWS.

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THE DIPHTHERIA ANTITOXIN QUESTION--DISCUSSION BEFORE THE NEW YORK ACADEMY OF MEDICINE.

ORIGINAL ARTICLES.

CLINICAL OBSERVATIONS UPON THE USE OF ANTITOXIN IN DIPHTHERIA; AND A REPORT OF A PERSONAL INVESTIGATION OF THIS TREATMENT IN THE PRINCIPAL FEVER HOSPITALS OF EUROPE DURING THE SUMMER OF 1895.[1]

BY JOSEPH E. WINTERS, M.D.,
OF NEW YORK.

SINCE Behring's treatment for diphtheria was proclaimed to the medical profession by Roux at the Budapest Congress in 1894, sufficient time has elapsed to warrant our taking a careful analytical review as to what has transpired with reference to it. Behring's antitoxin was given to the world as a specific against the toxins of the diphtheria bacillus. It has no action on the bacillus; this is not destroyed by the antitoxin; it is not rendered less virulent; it is no way influenced by the treatment. Behring has told us that his remedy has no influence on the poisons of other bacilli. Diphtheria in man scarcely ever occurs from a pure infection by the Loeffler bacillus. Almost invariably we find in addition to the specific diphtheria bacillus, streptococci, staphylococci, etc. The poisonous substances of the latter bacilli are in no way influenced by antitoxin. This fact limits very much the application of Behring's treatment to diphtheria in man. The toxin of Loeffler's microbe causes the cardiac paralysis, the albuminuria, and the paralytic phenomena. These were to be prevented by the neutralizing effect of antitoxin. If antitoxin is an antidote to the toxin of the Loeffler microbe, cardiac depression, death from cardiac paralysis, albuminuria and post-diphtheritic paralysis should all be prevented by the action of this agent. It was to remedy these manifestations of the disease that Behring gave to the world his antitoxin. Behring told us his treatment to be effective must be applied early in the disease. To get the maximum effect toxin and antitoxin must be applied at the same moment and at the same spot.

Armand Ruffer states that if you inject toxin on one side of the body, and antitoxin on the other side at the same time fourteen times as much is required to protect the animal; if there is a delay of one hour, one hundred times as much is required to protect the animal, and if there is a delay of eleven hours, five thousand times as much is required to protect the animal. In diphtheria in man we can never apply the antitoxin at the site of infection, nor at the moment of infection. A period necessarily intervenes from the time of infection until there are sufficient symptoms to call attention to the illness; and as the result of this there is a great limitation to the application of Behring's remedy to diphtheria in man. Another consideration of prime importance is, if we are to attribute the reported decrease of mortality of diphtheria to the action of a specific, this decrease must be uniform and constant. There must be the same reduction in mortality in all parts of the world where the remedy is applied. For instance, a mortality of eight per cent. in Paris and twenty-eight per cent. in London does not mean that the low mortality in the former city is due to the treatment, but that it is due to a difference in the character of the epidemic, and that when Paris is visited by an epidemic of the same severity as the one that exists in London it will have the same mortality in spite of the treatment. Again, if there is at work but a single factor, viz., antitoxin, in the reduction of mortality, that reduction must be below the lowest mortality recorded in the natural history of the disease in any part of the world, and it must be steadily maintained below this rate in all parts of the world; otherwise, the variations in mortality may be said to be due to the epidemic character of the disease.

We find recorded the following divergencies in the deaths from diphtheria, owing to the differences in the type of the disease:

[1] Read before the New York Academy of Medicine, May 21, 1896. Abstract made by the author especially for the MEDICAL NEWS.

In New York in	1884	1090
" " " "	1887	2167
In Boston in	1891	232
" " "	1894	817
In Philada. in	1888	350
" " "	1889	375
" " "	1892	1425

The rule of uniformity of results applies to reports by individual observers. If one hundred physicians report five thousand cases of diphtheria, treated with antitoxin, with a mortality of five per cent, and ten physicians report five hundred cases, treated with antitoxin, with a mortality of fifty per cent., the only logical conclusion is that there was a difference in the character of the cases in the two series, and that when the one hundred physicians meet, with a series of cases of the same type, as those treated by the ten physicians, they, too, will have a mortality of fifty per cent.

The most misleading part of the antitoxin literature is the constantly quoted percentage of mortality. For instance, the mortality from diphtheria in the City of Boston in 1895 was 14.48 per cent.; in 1893, 32.49 per cent.; and yet there were 112 more deaths from diphtheria in the City of Boston in 1895 than there were in 1893. The percentage mortality from diphtheria in the Boston City Hospital in 1893 was 48.44 per cent., and in 1895, 13.21 per cent.—and yet we find that there were 203 deaths from diphtheria in the Boston City Hospital in 1893 and 207 deaths in 1895.

BOSTON CITY HOSPITAL.

Year.	Cases.	Deaths.	Per cent.
1893	419	203	48.44
1894	598	266	44.48
1895 (antitoxin)	1566	207	13.21

From the foregoing it is readily seen that the percentage mortality is not only misleading, but is absolutely worthless unless accompanied by the actual number of cases reported and the actual number of deaths; and the report must also include a series of years in order to enable the reader to compare present results with the results in previous years when there was a mild type of the disease. Reports on the antitoxin treatment having ingeniously compared the years of highest mortality instead of including all years.

At the beginning of the antitoxin treatment Behring told us that all cases treated on the first day of the disease could be saved; of those coming under treatment on the second day, nearly all, and of those brought under treatment on the third day, the larger part of them. Behring's words were, "We have it in our hands to reduce the mortality from diphtheria to one-tenth of its former rate. Let us see how this promise of Behring's has been verified.

At the Willard Parker Hospital during the first nine months of 1895, the results were as follows:

	Cases.	Mortality. Per cent.
First day	108	10.09
Second day	130	25.19
Third day	116	34.18

A few cases may be cited showing actual results when treatment is begun in the earlier part of the disease:

Case I.—Six years old, admitted to scarlet fever ward February 1, 1896; recovered from scarlet fever and was ready for discharge. March 19th, at 11.30 A.M. she complained of sore throat. The diagnosis of diphtheria having been made by bacteriological examination, she was injected with two thousand units of antitoxin—just forty hours after the disease began. In spite of antitoxin, croupy symptoms, which manifested themselves early, increased, and intubation was done at 10 A.M., 46½ hours after the beginning of her illness. On the evening of the same day intubation not affording sufficient relief from the stenosis, tracheotomy was performed. Child died at 9.45 P.M.

In this case we have an instance of a child developing diphtheria in the hospital, being put upon serum treatment as soon as the diagnosis was confirmed. Notwithstanding this, the local process extended, even intubation not affording sufficient relief.

Case II.—Aged two and one-half years, admitted April 22d, ill one-half day. Throat clear, tonsils red and somewhat swollen, croup, some retraction, no cyanosis. Under the head of clinical notes we find, "Child rather croupy on admission." Antitoxin 2000 units on admission. Patient admitted 22d April about midday. April 23d, 8.55 A.M., intubation became necessary; 2000 more antitoxin units; temperature on admission, 100.8; April 23d, temperature 103.2; April 27th, temperature 99; April 28th, temperature 105; April 30th, temperature 101.6; afternoon of same day, 105.2. May 10th, baby died at 2.25 A.M.

This is an extraordinary record. Child had been ill one-half day on admission. Clinical notes state "Child rather croupy on admission." About the only evidence of disease then was, as stated above—in spite of antitoxin 2000 units, croup increased during the night; intubation became necessary the following day, about twenty-one hours after admission. Next, observe the

common temperature range which occurs when the patient shows unusual susceptibility to antitoxin.

CASE III.—Aged two years, admitted October 22d, one day sick. Marked injection and swelling, dirty white membrane on left tonsil, croup. Prognosis doubtful. Antitoxin 2000 units on admission. Admitted 9.30 A.M., intubated 4.15 P.M. October 23d, antitoxin 2000 units; 9.45 A.M., tube coughed up; 10.05 A.M., intubated, temperature 2 P.M. 104.6, hypodermic of brandy and nitro-glycerin, hot bath, etc.; October 24th, antitoxin 1200 units, 11.45 A.M., temperature 104, sponging, etc.; October 27th, temperature 105, sponge baths nearly every hour; October 28th, rash; October 29th, tube removed; November 1st, temperature went to 105, sponging almost hourly; November 3d, temperature 105.8, sponge baths nearly every hour; November 5th, 102 to 105; November 6th, temperature 105.8, sponge baths constantly kept up; November 7th, temperature 101.2 to 106.2, sponge baths almost constantly; November 8th, temperature 102 to 106; November 9th, patient died at 6.40 P.M.

Here we have a baby two years old, sick one day when admitted to the Hospital, October 22d, 9.30 A.M., given antitoxin immediately (in all 5200 units), and the result is shown by the clinical history. If antitoxin has any possible effect in neutralizing the poison of diphtheria, in relieving or preventing stenosis, or in any way allaying laryngeal symptoms, only a very small part of the clinical history here recorded would have manifested itself. There are several histories which show undoubted instances of the bad effects of antitoxin on nervous centers.

CASE IV.—Child aged fourteen months, admitted November 6th, illness began November 3d. Small patch of membrane on right tonsil, K.-L.B., no complication. Antitoxin 1000 units on admission. November 9th, slept at intervals quietly, but was very restless when awake; November 10th, extremely restless most of the night, temperature 104, sponge bath; November 12th, pulse very weak; November 20th, rash appeared; November 6th, antitoxin 2000 units, 5.30 A.M., intubated at 1 P.M., very restless during the day, 8.15 P.M. temperature 106. Child failed to respond to stimulants. Temperature became more and more elevated, in spite of sponge bath. December 7th, died at 12.30 A.M.

According to the record, this child had almost no illness on admission. It became very restless after the first injection of 1000 units of antitoxin. Restlessness reappeared in exaggerated form after injection of antitoxin of 2000 units, along with high temperature and rapid respiration, until death.

CASE V.—Child, aged seven months, admitted February 4th, three days sick. Nothing in throat. Slight laryngeal symptoms. Clinical note states: "Slight croup, otherwise good condition." February 5th, antitoxin 2000 units; February 6th, antitoxin 2000 units; 4 A.M. temperature 104.2; February 11th, temperature suddenly rose and erythema appeared in patches over the body; temperature in the evening reached 105.4. February 12th, rash more marked since midnight; marked opisthotonos and stiff neck. February 12th, temperature 106 all night. February 14th, glands and right side of neck swollen, temperature 104 to 106, until March 18th, patient had convulsions during the night. March 19th, child died 9 P.M.

CASE VI.—Child aged one year, admitted October 13th, three days sick, marked swelling and injection, no membrane, croup; intubated on admission. October 13th, antitoxin 2000 units. October 14th, antitoxin 2000 units. October 14th, tube coughed up at 4.10 A.M.; had to be reintubated at 8.30 A.M. October 15th, tube coughed up at 10.30 A.M.; reintubated 12.30 P.M. October 16th, tube coughed up at 7.10 A.M. October 19th, temperature suddenly rose to 104; temperature remained high, but somewhat fluctuating, until 21st, when it reached 105.4, and the baby had slight convulsions. In the afternoon, respiration became very superficial; patient failed to respond to stimulants. October 21st, died at 5.25 P.M.

CASE VII.—Child, aged fourteen months, admitted February 20th, five days sick. Rather thick patch on right tonsil, cry and breathing croupy, no retraction. "Patient admitted in croupy condition; not bad enough to require intubation: prognosis good." Antitoxin 2000 units. February 21st, antitoxin 2000 units at 10.15 A.M. Intubated at 2.10 P.M. 5.45 P.M., tube removed. February 23d, 8.30 A.M., temperature 104.5° F.; 12 M. 105° F.; pulse, 184; respiration, 84. 11 P.M., temperature, 106.2° F.; opisthotonos; plunge bath for ten minutes. February 23d, temperature down, but still opisthotonos and great prostration. February 29th, opisthotonos; eyes rolled up, with lids half closed when asleep. March 3d, opisthotonos and rolled up eyes. March 6th, died at 8.15 P.M.

CASE VIII.—Child, aged three years, admitted February 17th. Four days sick. Much membrane on either tonsil, and in pillars of fauces. Nose plugged; prognosis doubtful. Antitoxin 2000 units on admission. February 18th, antitoxin 2000 units. February 19th, antitoxin 2000 units. February 21st, patient seems better today. This evening he gave a peculiar cry, heard by the nurse, and was dead on the arrival of the physician a moment later. There were no heart-sounds, but artificial respiration was kept up for ten minutes, and stimulants were also given. Patient gasped several times and died.

CASE IX.—Patient, aged sixteen years, admitted May 20th; illness began May 18th; well-devel-

oped and nourished. Glands of the neck enormously swollen; throat much congested; swelling and implication of left tonsil, right tonsil, and right peritonsillar space, and whole area back into pharynx covered with a dirty white deposit. Nares partially obstructed; prognosis favorable. Antitoxin 10 cc. $\frac{1}{1000}$ injected on admission. May 31st, 9 cc. $\frac{1}{1000}$. May 25th, 7 cc. $\frac{1}{1500}$. May 26th, pulse 26 to 30 per minute. Patient died at 10.30 P.M.

This was a remarkably large, strong, well-developed young lady, who was brought to the Hospital as soon as the diagnosis of diphtheria was made. If antitoxin has any specific influence over the toxin of diphtheria this patient should have been saved. As the report of the hospital shows she died from the effects of the toxins on the heart and nervous centers. The pulse having ranged during the last twenty-four hours of life from 26 to 30 per minute, even with the foot of the bed elevated, and with the use of all possible stimulants.

These histories are of cases brought under treatment in the early part of the disease—many of them on the first and second day. They had full doses of a supposed specific, and we do not find recorded in the clinical history one statement which would indicate that this specific modified in any particular a single manifestation of the disease, either in the laryngeal or non-laryngeal cases. Not one item in the clinical records can be found to indicate that any one of these cases was in any way benefited by the antitoxin. This is particularly noticeable in the laryngeal cases. Patients brought in without evidence of very marked croup, and after receiving full doses of antitoxin, had to be intubated twelve and twenty-four hours after hypodermic use of this so-called specific. The clinical records of these cases are totally against the use of antitoxin in the treatment of diphtheria. A careful study of these records will, it seems to me, convince one who is familiar with diphtheria that there are clinical features here recorded which are due to the treatment and not to the disease. These features are referable to the kidneys, nervous centers, temperature, and respiratory organs. There are forty-one similar cases reported. The numerous cases quoted from journal literature, showing the injurious effects of antitoxin, are many of them exact counterparts in their clinical course of the Willard Parker Hospital cases here reported, and taken together, are confirmatory of the view that antitoxin may prove an immediate fatal poison, even when given in immunizing doses—that it may cause nervous phenomena, convulsions, etc., that it may cause anuria, nephritis, albuminuria, hematuria, cardiac collapse, high and uncontrollable temperature, probably due to septic processes, septic pneumonia, subcutaneous hemorrhages, petechiæ, arthralgia, joint effusions, intestinal hemorrhages, fetid diarrhea, etc.

In New York and elsewhere it has been claimed in defense of the serum that the unfortunate ill-effects, in the form of high fever and suppurations, are due to streptococcus infection; but if this were really the case they should supervene while the morbid affection is in process of evolution in the throat; whereas, they usually supervene after the disappearance of all throat lesions. It is now stated that the bad effects, which formerly resulted from the use of antitoxin, were due to the amount of serum injected, and that with the use of a more concentrated serum there would be less pneumonia and bad after effects than formerly. This is a very weak admission. It is an admission that there are bad effects from the serum. One year ago it was asserted most positively by the advocates of this treatment that there was no bad effects—that it was absolutely harmless in doses of any amount.

ANTITOXIN IN PRIVATE PRACTICE.

Dr. Edwin B. Tefft (New Rochelle) reports five cases of diphtheria, treated with antitoxin, three deaths, mortality sixty per cent. During the same period there were five cases stated by Dr. Tefft to be equally severe, treated without antitoxin, all recovered. Cases treated with antitoxin had the same internal and local treatment as those treated without antitoxin. These antitoxin cases had a so-called specific at the very beginning of the disease, and in addition such tonic, stimulating and local antiseptic treatment as one of our best physicians could devise, and yet they show a mortality of sixty per cent., as contrasted with no deaths in five other cases treated without antitoxin.

Dr. de Kraft had three cases of diphtheria in one family, two treated with antitoxin at the beginning of the disease and both died; one without antitoxin got well. Another patient in Dr. de Kraft's practice died one hour after the injection of antitoxin.

Dr. J. C. Shannon recently treated two patients in one family with antitoxin at the very outset of the disease, and both died.

Dr. Koempel reports case of a child taken ill on the night of April 22d. Antitoxin during the first twelve hours; second dose the following day. Child died twenty-four hours later.

Dr. J. H. Bache reports three patients treated at the beginning of the disease, two of whom died. A third case, the child of a physician, barely escaped death from the after-effects of antitoxin.

Dr. P. H. Ernst reports twelve patients treated with antitoxin, 7 deaths, mortality 58.3 per cent.; 65 patients treated without antitoxin, 11 deaths, mortality 16.9 per cent.

Dr. John Dorning employed antitoxin in his private practice in seven consecutive cases of diphtheria, in the early part of the disease, in some of the patients during the first twelve and eighteen hours, and all the patients died.

MORTALITY IN THE WILLARD PARKER HOSPITAL.

Year.	Cases.	Deaths.	Per cent.
1894 (non-antitoxin)	699	205	29.32
1895 (antitoxin)	778	190	24.42

Could those cases be eliminated which gave no clinical evidence of diphtheria, the mortality of twenty-four per cent. for 1895 would be greatly increased.

Dr. Ewing made an investigation in the Willard Parker Hospital, with reference to influence of antitoxin on the blood. His investigations included 53 patients with diphtheria, 50 of these were injected with antitoxin, 19 died, mortality H. 38 per cent. Dr. Ewing's investigations in the Hospital was in cases in which there was clinical evidence of diphtheria; and my impression is that this report (38 per cent. mortality) would fairly well represent the actual mortality of the Willard Parker Hospital at the present time under serum-therapy, if patients who have clinical evidence of diphtheria were subjected to this treatment to the exclusion and elimination of those cases which have no clinical data to warrant the diagnosis of diphtheria. In order to determine the result with reference to larger or smaller doses of serum, it was decided in the autumn of 1895, to give to alternate cases as admitted into the hospital, doses of serum of 1000, 2000, and 3000 units, respectively. There were two series of cases, known as mild and severe, having 2000 and 3000 units respectively. In the two series of cases marked "severe," having 2000 and 3000 units respectively, at a dose, there were 23 patients in the series having 2000 units, of whom 7 died, mortality 30.4 per cent.; and there were 22 cases in the series marked "severe" having 3000 units; of these, 11 died, mortality 50 per cent. In the 2 series marked severe, the cases were probably of nearly equal severity, inasmuch as they were alternate cases as received into the Hospital, the mortality being higher with the larger doses of serum, in a series of parallel cases. Since these experiments, no child has received doses of 3000 units. In this series of experimental dosage, there were 94 cases, 24 deaths, mortality 25.5 per cent. Children under two years in 1894, 163 cases, 84 deaths, mortality 51.5 per cent.; in 1895 (antitoxin year), 153 cases, 95 deaths, mortality 62.1 per cent.

At the very time of life when diphtheria is most dangerous, we have in the Willard Parker Hospital a mortality of 10.6 per cent. greater with antitoxin treatment than without.

ANTITOXIN IN NEW YORK FOUNDLING ASYLUM.

Professor J. Lewis Smith has reported 31 diphtheria patients treated with antitoxin in the New York Foundling Asylum, 12 on the first day, 17 on the second or third days, 2 on the fourth or fifth days; 17 died, mortality 54.8 per cent. Mortality in New York Foundling Hospital in 1894 (non-antitoxin year), 24 per cent.; 1895 (antitoxin year), 45.7 per cent.

MUNICIPAL HOSPITAL, PHILADELPHIA.

During the year 1895, there were 706 cases of diphtheria treated in the Municipal Hospital, Philadelphia; 302 of these received serum; 404 treated without serum. No patient was injected who had been ill more than four days at the time of admission to the hospital. Cases that were considered hopeless on admission did not receive serum treatment; all patients that were considered hopeless and brought to the hospital were placed with the non-serum treated cases, and some of these died within an hour after admission. The mortality in the 302 cases treated with serum was 28.1 per cent. The mortality in the 404 cases treated without antitoxin was 25.9 per cent. The cases treated with serum had the same local antiseptic treatment and the same internal medication and stimulation that were given to the series of non-serum treated, and yet with a so-called specific added to the treatment in a far more favorable series of cases, there is a higher death-rate than in those not treated with serum.

RESULTS IN BLEGDAM HOSPITAL, COPENHAGEN.

Fifty-one cases of severe diphtheria, treated with serum, 46 cases of severe diphtheria treated without serum, during the same period, mortality 33 per cent. in both series. The average age of those treated without serum was lower than those treated with serum. Among those who died, those who were treated with serum, were admitted

earlier to the Hospital than those who were not so treated. At the time of admission to Hospital, complications were more pronounced in the cases treated without serum, the air-passages being affected in 8 cases, while with those treated with serum, only 3 were affected. Severe complications of the kidneys (after admission to the Hospital) were observed only in those treated with serum. The serum was used earlier in the fatal cases than in the cases which recovered. That is, the day of the first injection was, on an average, earlier in the fatal cases than in the successful cases. From our experiments we cannot see any favorable action of the serum. On the other hand, we observe more severe hemorrhages, albuminuria, nephritis, toxic-anuria, fever, eruptions, etc., in those treated with serum. The serum was also used in croup cases complicated by severe diphtheria, and in mild cases of croup for the purpose of preventing stenosis. The mortality in all cases (operated and not operated) was 28 per cent., and for operated cases 40 per cent.; but during this same period there were 87 cases of croup that were not injected; the mortality in these for all cases (operated and not operated) was 25 per cent., and for operated cases 38 per cent.; therefore, lower than in those treated with serum. Severe diphtheria complicated with croup did very badly with this treatment. All such patients died, and the good result in milder cases is explained by the good type of the present epidemic.

REPORT OF THE MEDICAL SUPERINTENDENTS OF THE METROPOLITAN ASYLUMS BOARD HOSPITALS (LONDON), 1895.

This report embraces 2182 cases of diphtheria treated with antitoxin, 615 deaths, mortality 28.1 per cent. The medical superintendents compare this report with that of 1894, when 3042 cases of diphtheria were treated in all the hospitals of the board without antitoxin, 902 deaths, mortality 29.6 per cent.; but we find that in the Northwestern and Southwestern Fever Hospitals of London, the following results to compare with the antitoxin statistics:

SOUTHWESTERN HOSPITAL.

Year.	Cases.	Deaths.	Per cent.
1892	463	93	22.5
1893	585	159	27.1
1894	546	156	28.5
	1594	408	25.5
1895 (antitoxin)	316	94	29.7

NORTHWESTERN HOSPITAL.

Year.	Cases.	Deaths.	Per cent.
1892	682	138	21.8
1893	1249	332	26.5
1894	1147	309	26.9
	3078	779	25.3
1895 (antitoxin)	363	117	32.2

IN THE SOUTHWESTERN AND NORTHWESTERN HOSPITALS, 1892, '93, '94.

Cases.	Deaths.	Per cent.
4672	1187	25.4

IN ALL THE HOSPITALS, 1895 (ANTITOXIN).

Cases.	Deaths.	Per cent.
2182	515	28.1

There were 225 tracheotomy cases in all the hospitals of the Metropolitan Asylums Board, in 1895, treated with antitoxin; 113 deaths, mortality 50.2 per cent. During the year there were 30 tracheotomy cases in these same hospitals that did not receive antitoxin; 12 deaths, mortality 40 per cent—10.2 per cent. lower without antitoxin than in those treated with antitoxin. This is just the result to be expected when a depressant like antitoxin is added to the treatment of cases of diphtheria so serious as to require tracheotomy. It cannot be said that the tracheotomy cases, which were not treated with antitoxin were mild cases. The tracheotomy cases treated with and without antitoxin during the year 1895 were cases of the same degree, and offered a very good field for comparison of results.

At the Northwestern Hospital, during 1892, '93, '94, there were 215 tracheotomy cases, 124 deaths mortality 57.6 per cent. During 1895 there were 28 tracheotomy cases in this Hospital treated with antitoxin; 18 deaths, mortality 64.2 per cent. During the year 1895 there were 4 tracheotomy cases in the Northwestern Hospital treated without antitoxin; all recovered. Nothing could be more conclusive of the depressing and dangerous effect of the antitoxin in that severe form of diphtheria of the larynx and trachea, which necessitates tracheotomy, than the records of the Northwestern Fever Hospital for the years 1892–'95.

ANTITOXIN IN LARYNGEAL DIPHTHERIA.

About the only claim made for antitoxin at the present time by its advocates is that it has a favorable influence in laryngeal diphtheria; that it relieves stenosis; that it obviates the necessity for operative interference; that the mortality is lower in non-operated cases and operated cases treated with serum; that the tube can be removed

earlier when operation becomes necessary. If antitoxin does not cause a "melting away" of the membrane, as it was first claimed, and does not lessen the duration of the membrane in the visible portions of the throat, what reason have we for supposing that it influences the duration of the membrances in the larynx? The mortality in the Willard Parker Hospital for the first nine months of 1895, in intubation cases treated with antitoxin was 68 per cent., and for the last quarter, 76.9 per cent. During the first quarter of 1896, 67.7 per cent. In April, 72.7 per cent. In the Municipal Hospital, Philadelphia, there were in 71 intubation cases, treated without serum in 1895, 40 deaths, mortality 56.3 per cent. Widerhoefer gives mortality of 43 per cent. in intubation cases before serum treatment.

Von Ranke in 326 intubation cases, mortality 57.4 per cent., before serum treatment. Meisenbach, 57 per cent. in tracheotomy cases in the Philadelphia Children's Hospital, before serum treatment. In Strassburg, in 397 tracheotomy cases (1891–94), mortality was 44.3 per cent. In Geneva (1872–88), mortality in tracheotomy cases, 49 per cent.

In the University College Hospital (London), mortality in tracheotomy cases in 1894 (non-antitoxin year) was 47 per cent.

Is not the very high mortality in intubation cases treated with antitoxin in the Willard Parker Hospital, when compared with the results in intubation cases without antitoxin in the Municipal Hospital, Philadelphia, and the intubation cases reported by Widerhoefer and Von Ranke before serum treatment, and in tracheotomy cases in Philadelphia, and in all parts of the world, before serum treatment, a most positive warning against the use of this treatment in this serious and dangerous form of diphtheria?

Why is it that antitoxin has to-day the hold on the profession which it has? The fame of antitoxin is largely due to the influence of two hospitals—the Empress Frederick Hospital (Berlin) and the Hospital for Sick Children, in Paris. We find that the Empress Frederick Hospital received 875 cases of diphtheria during 14½ months of serum treatment, and that there had been received into the same Hospital during the previous four years only 1063 cases of diphtheria. It is owing to this increase in the number of cases of diphtheria in the various hospitals, and the increase in the number of cases reported as diphtheria, as the result of the bacteriological diagnosis in various cities of the world, that antitoxin is reputed for reducing the death-rate of diphtheria. A careful examination of the subject reveals the fact that the actual number of deaths have not been lessened, but, as stated at the outset of this article, the fame of antitoxin rests on the reported decreased percentage mortality. We find, on examination of the reports from various cities and hospitals, just what was pointed out, with reference to the City of Boston as a whole, and of the Boston City Hospital, that the actual number of deaths have not been lessened.

A CRITICAL ANALYSIS OF DR. WINTERS' CLINICAL OBSERVATIONS ON THE ANTITOXIN TREATMENT OF DIPHTHERIA.[1]

BY JOHN W. BRANNAN, M.D.,
OF NEW YORK;
ATTENDING PHYSICIAN TO BELLEVUE AND THE WILLARD PARKER HOSPITALS.

WHEN asked, some weeks ago, to take part in the discussion of the antitoxin treatment of diphtheria, it was only after considerable hesitation that I decided to accept the invitation. There were several reasons for my hesitation. In the first place, my experience with antitoxin, like that of Dr. Winters, is practically confined to hospital practice, and I believe that the time has passed when hospital experience can contribute much of value to the subject under discussion this evening. One year ago the case was different. At that time we had to rely entirely upon the experience of hospital physicians, who alone had a large number of cases at their disposal. Antitoxin must be administered early in order to get the best results, and we all know that cases do not, as a rule, reach the hospital until several days have elapsed from the beginning of the disease. It is in private practice only that the disease can be recognized and treated early, so that antitoxin may exert its greatest effect. Fortunately we have now the experience of a large number of private practitioners, and it is they alone who can speak with authority on the subject. There are many in this room who have treated from twenty to a hundred cases, and I do not think that either Dr. Winters or myself is competent to express an opinion in their presence on the real value of antitoxin.

Secondly, I can hardly criticize Dr. Winters' views of antitoxin without commenting upon the attitude he has publicly assumed toward the Willard Parker Hospital. If Dr. Winters' position is sound and his observations are correct, the City of New York has been maintaining for

[1] Read in the Discussion on the Antitoxin Treatment of Diphtheria before the New York Academy of Medicine. Abstract made by the author especially for the MEDICAL NEWS.

eighteen months a hospital to which children have been taken and subjected to a method of treatment which is not only useless, but has in many instances led to the death of those children. This has been distinctly stated by Dr. Winters, and cases described by him in detail. As these statements have been made more than once in this Academy, it is here that they should be disproved, if possible.

A few words as to what led to the use of antitoxin in Willard Parker Hospital, and who is responsible for its administration. In the autumn of 1894 the Board of Health, in view of the claims made for it abroad, decided to give it a fair trial in the hospitals under their charge as soon as a sufficient supply of the serum could be obtained. The hospitals of the Health Department differ from the rest of the hospitals of the city, in that they have a resident physician who is directly responsible to the Board of Health, and only indirectly to the Board of Visiting Physicians attached to the hospital. The position of the Board of Visiting Physicians has been rather that of advisers and consultants. We, as a body, were entirely in favor of the step taken by the Board of Health. I state these facts to make it plain that all of the visiting physicians at Willard Parker Hospital stand on the same level with reference to the use of antitoxin at that Hospital. No one of us has any especial interest in its use other than to determine its real value in the treatment of diphtheria. In considering the position which Dr. Winters assumed in his paper, read at the last meeting of the Academy, I wish it understood I am attacking his position, not himself. We believe that he has made a grave mistake, and has done great wrong to the Hospital of which he is one of the physicians, and that his words have caused widespread harm among the people of New York and of the whole country.

Before taking up the evidence submitted by Dr. Winters in support of his views let us see whether he entered upon his observations in the Hospital with a mind open to conviction and free from bias. One cannot read the arguments of any of the opponents of antitoxin without being struck with the fact that they all start with a distrust of the bacteriological diagnosis of diphtheria, and with a reluctance to accept the help offered by the bacteriologists to the clinicians. Dr. Winters is no exception to this rule, and as long ago as December, 1894, it was evident to the other members of our Board that he had strong doubts of the curative power of antitoxin, and was prepared to find it of no value. The systematic use of antitoxin was begun on January 1st of the following year, and from the very beginning he had no faith in its virtues, and was daily proving to himself that he was right in his opinion. He, however, kept his counsel, and no one had any inkling of what was to take place on that memorable evening in April one year ago. After barely three months of observations on some one hundred and fifty hospital cases, Dr. Winters had decided, for all time, that antitoxin was absolutely without value, and in addition produced great harm, even to the extent of causing death in those to whom it was given. From that time to this he has become more fixed in his convictions, and has confirmed them by a personal investigation of the hospitals of Europe.

I, unfortunately, was not present at the meeting last year, but I have read and reread his vivid description of cases which had died of antitoxin poisoning in the Willard Parker Hospital. I shall now take up some of the statements made in Dr. Winters' last paper, first, those bearing on his observations in the Willard Parker Hospital, and, secondly, the ideas which he had gathered on his trip abroad.

All advocates of antitoxin state that it must be given early and in efficient doses in order to produce its full effects. Dr. Winters claims that even when given under these conditions it is not only valueless, but, as seen by its action on mild cases, it even causes the death of the patient. In proof of this he cited twenty-five or thirty cases of favorable prognosis, which had been injected on the first, second, or third day of the disease, and still died. He stated that these cases were taken from the early months of 1895 and 1896—twenty-five or thirty cases. He did not give the full details of the cases; time did not permit of his giving more than what he called the "gist" of the cases. I have collected the records of all fatal cases injected on the first, second, and third day, during the first four months of 1895 and the same period for 1896. There were nineteen in 1895. Twelve were two years of age or less; two were between two and three, leaving only five cases above the age of three years. One was four, two five, one seven, one forty-five. What was the condition of these fatal cases? Twelve had laryngeal stenosis, requiring intubation. Seven of the twelve cases in addition had pneumonia. Five of the non-laryngeal cases also had pneumonia, making twelve cases of pneumonia, and seventeen of the nineteen with either pneumonia or laryngeal stenosis, or both. The single adult case of the group, when he entered the hospital, showed im-

pending delirium tremens. In spite of that the prognosis was put down as favorable.

Now, what was the prognosis stated in those cases? It was stated in the records, instead of being favorable in all, that the prognosis was good in six, doubtful in five, bad in eight.

Let us now take the cases for a similar period in 1896, January 1st to May 1st—some thirty-three fatal cases injected on the first, second, or third day. Seven were less than one year of age, thirteen more were less than two, four just two, five between two and three, making twenty-nine of the thirty-three fatal cases under three years of age, four cases over three years of age. Character of the cases: Twenty-two had laryngeal stenosis, requiring an operation in nineteen, fifteen cases had pneumonia, two suffered from sepsis, one, the only adult, was intoxicated on admission. The prognosis was stated on the records as good in two, doubtful in twenty, bad in eleven. The gist of the cases as given by Dr. Winters was, if I remember rightly, favorable prognosis practically in all; death after injection of antitoxin.

Dr. Winters has stated that since the introduction of antitoxin into the Hospital there had been much greater use of stimulants. Now, it had been the distinct impression of all the rest of the attending staff that less stimulants had been used during the last sixteen months, just as they had found the treatment diminished the amount of iron, etc., used. Through fear that we might have been deceived, I sent to the clerk of supplies to the Health Department, and had learned the amount of alcoholic stimulants used in the Hospital during the antitoxin period, and for a like period just before. Then considering the number of patients in the Hospital for these periods, and the average daily attendance, I found that during the period when antitoxin was in use the amount of alcohol, per patient, per day, was considerably less than one-half an ounce, while during the previous period it was two-thirds of an ounce.

Regarding diarrhea, from which Dr. Winters had said there had been trouble, none of the rest of us had seen it. If anything, there had been more trouble from constipation. The ward charts of perhaps a majority of the patients will show a record of laxatives ordered by the resident physician.

In his paper Dr. Winters has spoken of a very peculiar type of broncho-pneumonia, which he attributed to the dissolving action of the serum on the blood. He had also spoken of the great amount of suppression of the urine, requiring various measures to relieve it, and of increase in albuminuria. Considerable stress also has been laid on cardiac weakness. We have seen no change in these respects in the Hospital. The cases had been just about as they were before, so far as the general condition was concerned, but cases had recovered in greater numbers. They had not been able to say just why, but the mortality had been less. The death-rate in 1894, previous to the use of antitoxin, had been about thirty-four per cent. In 1895, under the antitoxin treatment, about twenty-six per cent.

Dr. Winters had made a comparison at the last meeting which was a little misleading. The figures for intubation the past year, since the introduction of antitoxin, had given a mortality of seventy-two per cent., as compared with eighty-five per cent. in 1894. Dr. Winters had not been very much impressed with this apparent reduction of the mortality to seventy-two per cent., as he stated that a former resident physician at the Willard Parker Hospital had obtained a mortality of only fifty per cent in *laryngeal* cases. Note the difference: *laryngeal* cases, not cases of intubation. Dr. White had made that report, and he did not claim a mortality of only fifty per cent. in intubation cases. I do not know what is the exact mortality from laryngeal cases during the use of serum, but I believe it is between forty and forty-five per cent.

Dr. Winters has spoken of so many cases coming in since January, 1895, with nothing in the throat, but, I have found that according to the records one-third of all the cases in 1894, before the use of antitoxin, had no membrane, or but a small amount, attached to the tonsils. During the spring and the autumn of 1894 I was in the habit of taking students to the Hospital, and on asking the resident physician: "What have we to show the students to-day?" I was met over and over again with the reply that there were two or three new cases, but with nothing in the throat.

It was curious that in this new disease described by Dr. Winters, there had been no *post-mortem* findings. Many *post-mortems* had been made last year. I have attended many, and Dr. Winters also, and portions of the organs were secured by Dr. Winters for private examination. I expected to hear the results of the autopsies and histological investigation. Perhaps these were included in the portion of the paper not read. In my opinion, the lesions were such as had been seen before the use of antitoxin—broncho-pneumonia, fatty degeneration of the heart, and nephritis. A report by Kolisko of Vienna, on this subject is very instructive. Kolisko has been

professor of pathology and pathologist to the University of Vienna since 1882. He had made some thousand autopsies on diphtheria. Since the use of antitoxin he had made seventy-five autopsies, and was convinced that the serum influenced the diptheritic process most favorably. The membrane was more easily separated, and was often loosened. The same thing had been seen before the use of antitoxin, but never to the same extent, or so soon after the onset of the disease. It was necessary, however, that a certain period of time should have elapsed after the injection, and that the dose should reach a certain amount, for if it were too small, separation of membrane would not be observed. When the process had penetrated deeply, the effect was less marked or *nil*. The anatomical changes in the internal organs were the same, broncho-pneumonia, fatty heart, changes in the kidneys.

Kolisko also stated that at times, before the use of antitoxin, all cases would show nephritis, then there would be a period when there would be none, and it was so since the use of antitoxin. He was positive that antitoxin had no effect in producing nephritis. Kolisko lays stress upon the important clinical fact that the diphtheritic process may remain localized at some hidden point, as in a crypt of the tonsil, or in the nasal cavity, and then suddenly break out with great virulence and fatal termination. Such cases illustrate how we may be deceived when we believe that we are injecting a case on the first or second day of the illness.

Dr. Winters quoted a number of the physicians attached to the hospitals of the Health Department as expressing themselves unfavorably to antitoxin. Some of the physicians had gone so far as to say, according to his quotation, that they knew cases which had died from the use of antitoxin. It would seem to prove that Dr. Winters does not realize the significance of his own utterances when he attributes such statements to men who hold official places under the Health Board. I have been told by many of these men that Dr. Winters had not altogether understood their views.

I shall now refer briefly to the evidence collected by Dr. Winters in Europe. Regarding some who were supposed to be the opponents of antitoxin, Hansemann, who was supposed to reflect the opinion of Virchow, had had nothing more to say when Virchow, on observing the results at the Berlin Children's Hospital, was so struck by those results that he was compelled to change his opinion, and became a convert. Kassowitz of Vienna, was a disbeliever after an experience with eight cases, but he had had nothing to say since, after having been answered by Widerhoefer. Lennox Browne had once been a strong opponent of antitoxin, and is probably still skeptical. Two of the men quoted by Dr. Winters as having been opposed to antitoxin, one in Paris and the other in England, were young men, and had not had that experience with diphtheria previous to the introduction of antitoxin to enable them to appreciate the improved results under the latter. Variot, who had been represented by Dr. Winters as a firm believer in antitoxin, but was now opposed to it, had always been inclined to dwell upon the unfavorable side of antitoxin, as is shown by the simple titles of his papers.

Toward the end of his paper Dr. Winters had stated that all the earlier claims for antitoxin had been abandoned. I can hardly believe that he had really meant to go as far as that. I have looked over the literature of the last few months, and have here the strongest testimony from various parts of the world—Massachusetts, Germany, England, and Japan. These papers, from which I shall read a few extracts, all speak of favorable results from antitoxin, both in the treatment of diphtheria and when used for immunizing purposes.

In the foregoing analysis of Dr. Winters' clinical observations, I have not attempted to estimate the exact value of antitoxin in the treatment of diphtheria. I have kept steadily in view the task I set myself at the outset—the task of proving that the children in the Willard Parker Hospital have not been injuriously affected by the administration of antitoxic serum. This purpose I believe I have accomplished. Incidentally, it has also been demonstrated that the position of Dr. Winters in regard to antitoxin does not stand the test of critical examination. His descriptions of cases of antitoxin poisoning in the Willard Parker Hospital have no sound basis of fact, and they have not been confirmed by other observers, though they were published to the world more than one year ago.

DIPHTHERIA WITH AND WITHOUT ANTITOXIN.[1]

By WM. L. STOWELL,
of New York.

The basis of this article was a study of 240 cases that the author had treated in dispensary practice during the years 1888–1895 inclusive, *without antitoxin*. He gave results of treatment

[1] Read at the meeting of the New York Academy of Medicine, June 4, 1896. Abstract made by the author especially for the Medical News.

reported by other observers for the same period, and a *resume* of results with antitoxin in the same class of cases and in his hospital service.

One hundred and seventy-six of his cases occurred up to March, 1895, and were reported last year in the *Medical Record*. The mortality was thirteen per cent., without eliminating those who died within twenty-four hours. Dropping such, the rate was ten per cent. As these were in part before the days of bacterial culture, he checked his figures by counting all the tonsillitis cases for the same time. Of these there were 551. Of the tonsillitis cases, many had a quantity of exudate that was membranous, but his aim seemed to be to avoid a diagnosis of diphtheria so far as possible. During 1895, he treated sixty-four cases of diphtheria, with a mortality of 7.8 per cent. This great fall in mortality was not due to change in method, for there was none, but to the large number of mild cases. In fact, only two were severe enough to call for intubation. The number of mild cases was attributed to the care with which all the physicians now report exudates as possible diphtheria.

The total figures were 240 cases in eight years; mortality 11.25 per cent., without eliminating. This was better than the health inspectors report on similar tenement cases given antitoxin. Their figures were 255 cases, 15.69 per cent. deaths. Smith, Billington, and Stowell together had published 495 tenement cases, with a mortality of a little over 10 per cent.

The Leipsig physicians, a few years ago, collected 1141 cases, with a mortality of 15 per cent. The *British Medical Journal* had also collected 1321 cases, with 14 per cent. mortality, before antitoxin days. These reports the author considered a better standard for practitioners than hospital statistics.

It was noted as a remarkable coincidence that the number of diphtheria cases reported in this city increased markedly from the beginning of cultures by the Health Department. Previous to 1893, the reports had been 4359, 4974, and 4654 per year, but the number then rose to 6469, 9155, and 9925 for the last three years. Similar results were seen in the official reports from Berlin and Paris, and in all cities where cultures are made by the health boards.

The author laid stress on the fact that many reported cases never presented clinical symptoms. He mentioned a family in which a boy had marked diphtheria, and where four other members were declared to have the same, even after the rooms had been fumigated. These four persons showed no evidence of disease, and did not take medicine. He instanced the case of the New York Infant Asylum, in which nearly half the inmates showed diphtheria bacilli in their throats when some children in the house were really down with diphtheria. These are the cases that swell the reports and cause a decrease in the ratio of deaths.

Klebs-Loeffler bacilli have been found on the floor of wards, on scrapings from the shoes of attendants, on the hair, etc. Roux found them in twenty-six of fifty healthy children whom he examined. Something more than the presence of germs is necessary to constitute the disease diphtheria. While the author has made a distinction in name between exudative tonsillitis and diphtheria, he has treated the former, like the latter, with iron and peroxid of hydrogen.

Returning to figures, the unfairness is shown of comparing 1895 with 1894 as to results, and claiming that antitoxin is the cause. In 1894, 2359 persons died in this city from diphtheria. This is the *greatest* fatal number on the city records. It is twenty years since 2300 such deaths occurred, and 2100 has been reached but twice in that time; 1634 died of diphtheria in 1895. This is just the average for a decade previous to 1894, but of course must be increased slightly for increasing population. A mild year is therefore shown to be compared with the worst possible. A fall of 600 or 800 has occurred many times in the mortality returns, when no change of treatment could be thought to influence it.

The official reports of the Health Department regarding Willard Parker Hospital were then quoted. As there given, the mortality has averaged twenty-four per cent. since 1886. Great gains are claimed for antitoxin, while the fact is forgotten that three times since 1886 the mortality was less than in 1895.

The London Asylums Board hospitals reported a mortality of 30 per cent. in 11,000 cases treated during six years ending with 1894. In 1895, the same hospitals treated 2182 cases by antitoxin, with a mortality of 28 per cent. They add to this number 1347 cases treated without antitoxin (claimed to be mild, etc.), and report a death-rate of 22.5 per cent. In order to give the low rate for antitoxin, they report a series of cases of which more than one-third had no antitoxin.

The report of Boston City Hospital for December, 1894, and January, 1895, was cited. There, 80 cases with antitoxin gave a mortality of 16 per cent. At the same time, 40 cases had no antitoxin, and 30 per cent. of them died. The reason given is "that 5 patients were moribund on entering, that

6 were too far advanced in the disease, and because, owing to the insufficient supply of serum, it was thought best to withhold it for cases giving promise of better results."

The refusal of a health inspector to inject cases on Randall's Island, "because it would increase the percentage of deaths," was cited. The doctor did not blame either of these men, but cited the cases to exemplify the fact that no cases are too bad for comparison with antitoxin, but that it is given in early and favorable cases. The advantages of early treatment have been insisted upon by all writers and advocates of all treatment.

Examples of success without antitoxin were then given.

Hübner reports 117 cases with antitoxin, mortality 10.2 per cent; 46 complicated cases, with mortality of 21 per cent. Yet in 1889 he reported that by carbolic acid injections into the tonsil he had reduced the mortality of scarlatinal diphtheria from 35 per cent. to 10 per cent.

Hennig, in a collective report, gives 1054 cases by same treatment, mortality 2.7 per cent.

Seibert's mortality with chlorin injections was 5.7 per cent.

In the New York Foundling Asylum, the mortality was 52 per cent. in 1891, and 38 per cent. in 1892. This fell to 27 and 24 per cent. for the next two years under papyotin and hydrogen peroxid, but rose again to 45 per cent. when treatment was changed to antitoxin.

Loeffler uses alcohol, tolnol, and tr. ferri chloridi locally, and reports 71 cases in private practice with no death; also 30 cases in hospital with 16 per cent. mortality.

Jacobi reports 40 consecutive cases with 2.5 per cent. of deaths under mercury and iron treatment. In all, the author had on short notice compiled a table of more than 7000 cases treated without antitoxin, with a mortality of 8.8 per cent. This appears to show treatment better than antitoxin. It actually shows that when men are following their cases closely and treating early and often, they report good results.

The statistics in the paper of Dr. Welch, contain all the valuable statistics for antitoxin to July, 1895, but here the testimony is only by antitoxin advocates. Yet by reference to the original articles it is seen that many eliminate moribund cases, and include all suspected ones.

Fischer's report is 225 cases mortality 15.5 per cent., *versus* "about 55" previously. Accuracy *versus* a guess, and at the same time he states "I have reduced my mortality somewhat by not injecting hopeless cases."

Bigg's report is 225 tenement cases, mortality 15.69 *versus* 25 to 45 per cent. without antitoxin. The published records of tenement cases, according to the author, are but 10.55 without antitoxin.

The reports from Boston City Hospital, on analysis, show that one-third of the cases were eliminated during six weeks noted, and that 30 per cent. of these died.

The table concerning operations is remarkable. Kraske is credited with 16 tracheotomies with antitoxin; mortality 31 per cent.; 12 tracheotomies with no antitoxin, previously 25 per cent. mortality. His results were 6 per cent. more favorable without than with antitoxin. Yet we are told that "his cases were so few as to have no significance." If so, fifteen reports in the table should be set out, as they are based upon the same or a smaller number of cases.

The mention of nephritis and broncho-pneumonia is striking in some reports. At the Foundling Asylum, 79 per cent. had broncho-pneumonia with the antitoxin, whereas, 40 per cent. had pneumonia in 1894 without antitoxin. In the Willard Parker Hospital, 53 per cent. of antitoxin cases had pneumonia *versus* 16 per cent. in 1894 without antitoxin.

The *British Medical Journal* reports fifty cases in 1894 with 1.6 per cent. broncho-pneumonia *versus* 3.6 with antitoxin in 1895. It is fair to state, however, that in the Williard Parker Hospital the ratio of stenosis and septic cases fell as much as the pneumonia advanced.

Referring to his own cases again, the author said that the inspectors had reported 14 of the 64 cases as not having Klebs-Loeffler bacilli. However, two of these were fetid cases, two had extensive exudate and nose-bleed, another had exudate on the palate and uvula, as well as tonsils. In two, the germs were found when re-examination was asked. One woman complained of much irritation in her throat while tending her four children, all sick with diphtheria, one of whom died. Though no membrane appeared, a culture was made with negative results. Two died without culture reports, yet the bureau of records did not discredit the diagnosis.

As a method to convince himself of antitoxin virtues, the author stated that he had used the remedy in all his hospital cases, and intended to use it also in all dispensary cases for a year, that full years might he compared. Thus far, his mortality in the tenements with antitoxin had been 12½ per cent. In the infant hospital 53 per cent.

If the mortality of 7.8 for 1895, can be cut in two, as claimed, and only 3.5 prevail for 1896, the author will be an advocate of antitoxin. This review of personal experience and from reports of both sides up to the present, lead to the following conclusions:

That diphtheria is very variable in extent, both epidemically aud clinically.

That the distinction, true or false diphtheria, requires as much care bacteriologically as clinically. One culture is not enough.

That the present unusual number of cases reported is due to recording bacterial cases without symptoms.

That the falling *ratio* of deaths is due to the same causes. The total deaths do not fall as the ratio does.

That cleanliness and ventilation will immunize as well as serum.

That selected cases under faithful treatment of any reasonable kind lead to success.

As Simon well says the efficiency of the remedy not only, but fidelity in its use, gives results. The present antitoxin enthusiasm is born of bacteriology and elimination.

PROFESSOR BRUNS of Tubingen, has been elected president of the German Surgical Congress for next year.

STATISTICS OF DIPHTHERIA.[1]

BY C. G. COAKLEY, M.D.,
OF NEW YORK.

THE study of the statistics of diphtheria were divided into two periods, an early period prior to the year 1894 and a late period since the beginning of that year. The diagnosis of diphtheria in the early period was shown to be uncertain, as it depended upon certain constitutional symptoms which varied considerably, and upon the presence of a pseudo-membrane. From various motives, physicians during that time failed to report their mild cases, so that the mortality rate was made to seem higher than it really was.

The late period (ushered in by the establishment in cities of means for affording the general practitioner opportunities of having bacteriological examinations of cultures taken from patients' throats and the general interest in diphtheria due to the introduction of the antitoxin treatment) found a more exact method of diagnosis, and many cases that in the earlier period were not

STATISTICS OF DIPHTHERIA.

BOSTON.					NEW YORK.					BROOKLYN.				
Year.	Cases Reported.	Deaths.	Per Cent. Deaths.	Number dying per 10,000 Inhabitants.	Year.	Cases Reported.	Deaths.	Per Cent. Deaths.	Number dying per 10,000 Inhabitants.	Year.	Cases Reported.	Deaths.	Per Cent. Deaths.	Number dying per 10,000 Inhabitants.
1880	1715	588	34.2	16.19	1880	3307	1390	42.03	11.58	1880	3058	1104	36.16	
1881	1680	601	35.7	16.33	1881	5196	2249	43.26	18.13	1881	3218	1169	36.32	19.84
1882	1386	458	33.04	12.24	1882	3507	1525	43.48	11.91	1882	1873	631	33.68	10.34
1883	1415	444	31.4	11.71	1883	2096	1009	48.13	7.72	1883	1185	409	34.51	6.45
1884	1212	345	28.46	8.96	1884	2223	1090	49.00	8.01	1884	976	385	39.44	5.85
1885	1263	334	26.44	8.57	1885	2920	1325	45.37	9.46	1885	1348	519	38.50	7.56
1886	1188	329	27.69	8.20	1886	3737	1727	46.21	11.99	1886	1502	782	52.06	10.46
1887	1049	316	30.12	7.89	1887	5923	2167	36.58	14.54	1887	1995	950	47.62	12.21
1888	1411	470	33.30	11.08	1888	6491	1914	29.48	12.50	1888	2297	984	42.84	12.16
1889	1814	564	31.09	12.93	1889	6443	1686	26.16	10.67	1889	2798	1101	39.35	13.07
1890	1475	401	27.18	8.95	1890	4350	1262	29.21	7.74	1890	2241	902	40.25	10.30
1891	831	232	27.91	5.06	1891	4874	1361	27.92	8.10	1891	1850	766	40.86	8.41
1892	1353	414	30.59	8.86	1892	4654	1436	30.85	7.85	1892	1829	775	42.37	8.35
1893	1465	476	32.49	9.97	1893	[3]6468	1970	30.45	10.42	1893	1672	607	35.70	6.19
1894	[2]3019	817	27.06	16.67	1894	9155	2359	25.76	12.09	1894	[4]3812	1279	33.55	12.24
1895	4059	588	14.48	11.73	1895	9925	1634	16.46	8.73	1895	4277	1139	26.63	10.35

[1] Read before the N. Y. Academy of Medicine, May 21, 1896. Abstract made by the author especially for the MEDICAL NEWS.

[2] Bacteriological examination of cultures from throats, established in Boston, November, 1894.

[3] Bacteriological examination of cultures from throats, established in New York, May, 1893.

[4] Bacteriological examination of cultures from throats, established in Brooklyn, February, 1894.

considered to be diphtheria were found to be such. The accompanying table is taken from the official health reports of these cities:

The column "Number Dying per 10,000 Inhabitants" is more reliable than the column "Per Cent. Deaths" as a means of indicating the fatality of diphtheria, for "Per Cent. Deaths" depends greatly upon the "Cases Reported." The failure to report mild cases ending in recovery in the early period and the finding of others (mostly mild cases also ending in recovery) in the late period markedly effect "Per Cent. Deaths" without perceptibly affecting "Number Dying per 10,000 Inhabitants." Could these errors be eliminated, the figures in these two columns ought, with slight variations, to increase or decrease in the same ratio.

Examination of this table shows in all the cities

1. Great increase in the number of cases in 1894 and 1895.

2. Variations in the number of deaths in different years.

3. Per cent. deaths varying, but very low in 1895.

4. Number dying per 10,000, regular variation in rise and fall.

5. That while per cent. deaths *diminished* in 1894, number dying per 10,000 *increased* greatly.

6. While there is a fall in number dying per 10,000 between 1894 and 1895, yet in all but Boston greater falls have occurred before antitoxin was used.

7. Comparing the four columns for each of the cities for the three years 1893, 1894, and 1895, one fails to see that many lives have been saved, although the "Per Cent. Deaths" has been markedly lowered.

8. Diphtheria in 1894 was severe, as indicated by the deaths and number dying per 10,000. Did that epidemic die a natural death, or was it helped out of existence by antitoxin?

As a result of our study of the statistics of diphtheria, not only in the cities above named, but also in many others here and abroad, we find the conditions so different in the early and late period, as we have divided the disease, that any comparison of the death-rate of the latter period with the death-rate of the former period will be apt to lead one to erroneous conclusions.

M. GUINKOFF, at a recent session of the French Academy of Sciences asserted that he had been successful in photographing his own retina. He is now perfecting his method, which must be regarded as an important addition to our present means of accurately recording clinical observations.

CLINICAL MEMORANDUM.

MIND AND WORD DEAFNESS AFTER DEPRESSED FRACTURE OF THE SKULL WITH SUBCORTICAL HEMORRHAGE—OPERATION; COMPLETE RECOVERY.

By J. T. ESKRIDGE, M.D.,
OF DENVER, COL.;
NEUROLOGIST TO THE ARAPAHOE COUNTY AND ST. LUKE'S HOSPITALS.

FRANK P., twenty-three years of age, single, born in Bohemia, miner by occupation, was admitted into the surgical wards of the Arapahoe County Hospital on the evening of September 21, 1895. The family history, so far as ascertained, was good. The patient lived in his native land until he was thirteen years of age, when he came to the United States. During his youth he acquired a good knowledge of the Bohemian language for a man in the lower walks of life, and after coming to this country he attended school and spoke the English language almost as fluently as his native tongue. For a number of years he has worked in the coal mines of Colorado. He has been addicted to the excessive use of alcohol and occasional venereal excess: but he denies syphilis. He stated that he was never ill until the beginning of his present trouble.

On the 21st of September, 1895, in a drunken brawl, he was struck on the head just above the left ear with the butt of a revolver, or with a coupling-pin, and felled to the ground. On admission into the Hospital a few hours later he seemed dazed and confused, answered questions in English quite intelligently, but slowly. His temperature was 99.4° F. in the left axilla; 99.2° F. in the right; pulse, 80; respiration, 16. The next morning he was able to give some of the details of the injury, but by the afternoon of the 22d he ceased to be able to speak in English, and while he used words and phrases in the Bohemian dialect, they did not convey any meaning when translated into English.

At 8.30 P.M., I was asked by Dr. Rogers, who was attending to the surgical cases of the Hospital during Dr. Parkhill's absence, to see the patient in consultation with him. His temperature remained about the same as it was at the time of his admission, the pulse had fallen to 66, and respiration was 18, but regular. There was no paresis or paralysis of any muscles, the superficial reflexes were absent and the deep reflexes were decidedly lessened. The eye-grounds were normal. The patient watched me during the examination, and seemed to realize in a confused way what was going on. When I spoke to him he appeared to hear, but would answer in Bohemian, and sometimes in English, using words entirely irrelevant, and when shown things, such as a watch or keys, he gave no evidence of recognizing them; nor did he seem to understand anything that was said to him. When told, either in English or Bohemian, to put out his tongue, he made no effort to comply with the request. The mental confusion was so great that it was impossible to determine how much of his condition was due to the

localized injury in the left temporo-sphenoidal lobe, and how much to general brain disturbance.

After a careful examination I came to the conclusion that the patient could hear, but that sounds were unintelligible to him, and he did not seem to realize the use of things. There was such evidence of cerebral compression that Dr. Rogers decided to operate at once. On enlarging the wound, a depression of the skull above the left ear was found. The depressed bone was rectangular in shape, with the long axis extending from before backward and measuring in length 2½ and in width 1¼ inches. The center of the depression was on the auriculo-bregmatic line. The lowest portion of the fracture was a half inch above the base line of the skull. The fractured portion was entirely detached from the surrounding bone and depressed from one-fourth to three-eighths of an inch below it. On removing the depressed bone, the membranes seemed normal, and very little extravasated blood was found. As the brain pulsated about normally, it did not seem necessary to open the dura. The base of the skull could be examined readily by the finger, and the opening in the bone appeared to be about opposite the middle third of the second and third temporal convolutions.

The patient reacted well from the operation and on the next morning desired to sit up in bed, so that restraint was required to keep him in the recumbent posture. He looked confused, and did not seem to understand questions or the use of things. When he was spoken to, he would utter one or two disconnected words in Bohemian, and not infrequently would say "yes" in English to everything. The temperature, pulse, and respiration remained nearly the same as they had been before the operation. On the evening of the 23d, about twenty-two hours after the operation, his temperature in each axilla was 100°, pulse 60, and respiration 20.

He slept quite well during the following night, and remained in about the same condition, except that the temperature fell to normal, until four days later, September 27th, when, at 2.30 A.M., he had a violent convulsion in which the trunk muscles seemed to be more affected than those of the limbs. The head was retracted and the eyes were rolled upward to their fullest extent. The convulsion lasted two or three minutes. After this the general condition was about the same as before the convulsion. He was still unable to understand any question or to communicate any of his desires to the nurse or physician. The temperature remained about one degree above normal, but the same in each axilla. The respiration and pulse were normal. I tried repeatedly to examine into his aphasic condition, but was foiled on account of his mental confusion.

On October 4th, at 4 P.M., he had a second convulsion, which was preceded by a loud cry, and when the nurse reached his bedside she found him frothing at the mouth, breathing stertorously, and eyes turned upward. The convulsive movements were general and involved all the limbs. At 11.25 P.M. he had another convulsion, similar in almost every respect to the one that occurred during the afternoon.

On October 5th I saw the patient about noon in consultation with Dr. Parkhill, who had returned and was in charge of the surgical ward. Although no distinct form of sensory aphasia could be made out, it was found that he could utter sounds and words quite distinctly, and that he endeavored ineffectually to communicate his thoughts by speech. It was apparent that he heard my voice, but words to him were apparently meaningless. The ticking of a watch held to his ear, the ringing of a bell, or the jingling of coins seemed to convey to him no meaning. The words that he used, both in English and Bohemian, were so jumbled that they conveyed no meaning. He evidently could hear, even when the right ear was closed, as he looked in the direction from which sounds came, but he could not distinguish differences between the sounds of words, or differences between sounds other than words or speech. It was my belief that a lesion existed in the temporo-sphenoidal lobe, and on my recommending an exploratory incision into this portion of the brain, Dr. Parkhill decided to operate.

On exposing the dura the whole external surface of this membrane over the surface laid bare by the fracture was covered by a layer of organized lymph, at least one-sixteenth inch thick. The lymph was carefully scraped off, but still no pulsation of brain tissue could be felt or seen. The dura was incised and the cortical substance appeared healthy except that it did not pulsate. On cutting into the temporo-sphenoidal lobe at about the center of the wound, dark, partially clotted blood ran out, and on enlarging the opening with a pair of forceps, considerable dark fluid and clotted blood escaped, together with some softened and broken-down brain tissue. The hemorrhage was entirely subcortical and involved the white substance immediately beneath the posterior portion of the first and second temporal convolutions. The wound in the brain was irrigated with sterilized salt solution and the opening in the dura and scalp were closed, except a small space which was left for drainage.

The patient remained in about the same condition for twenty-four hours after the operation that he had been in previous to it, except the right lower side of face was paretic. On the afternoon of the next day, or October 6th, the nurse asked him to turn over in bed and at the same time made a motion in which direction she wanted him to turn. He obeyed her request. In the evening when shown a watch he said "One-half past." The watch at the time indicated 6.30 P.M. He could not be gotten to tell the hour. October 7th, 11.30 A.M., I found that he could read aloud, but could not pronounce long words, nor did he seem to understand what he read. The right side of the face was slightly paretic. It was impossible to get him to protrude the tongue, as he did not seem to understand what was wanted of him, even when I wrote the request and then protruded my own tongue. He seemed much brighter, and when I showed him my watch, which indicated 12.15, he said, "It's exactly a quarter of an hour." When the minute hand had reached the even hour I again showed him the watch, but he seemed to be unable to tell the time of day. When the watch was first shown him he said "pretty

fine," and when it was placed against his ear he said "going pretty well." When he was given asafetida to smell he said "pretty bad," and on giving him milk to drink he said "good," but he did not seem to understand anything that I said to him. He was evidently word deaf, but not word blind, as he could read slowly quite well, although he did not appear to appreciate what he read.

It was difficult, or almost impossible, to determine whether he recognized objects presented to him by the various senses, as he did not seem to be able to read understandingly. Besides, the local injury to the temporosphenoidal lobe, he was suffering from the general effects of traumatism of the head. He could not be induced to name any object, but he appeared to know the use of some objects, as evidenced by his answers when a watch was shown him or placed against his ear (left one). Spoken words had no meaning to him. He read slowly, but distinctly and connectedly, writing and printing, but it was doubtful whether he understood what he read. He made several ineffectual voluntary attempts to write, but could not combine the letters so as to make sense, although he could form the letters well. He could copy single words and read them, but would attempt nothing more, as he seemed to be exhausted. He could not write from dictation, because he could not understand what was said to him. It was observed that he never spoke voluntarily. The right side of the face was still paretic.

On the 8th he was able to recognize letters and call their names, and to write figures and read them. He was able to add two and two, but could not multiply. When shown playing cards he simply called them by the number of spots on them. When shown king, queen, and jack he said one. Cards did not seem to make any mental impression upon him except of number. He was unable to recognize a letter when it was traced with his finger. Re-examination of the eyes showed fundi entirely normal. It was impossible to test the visual fields. The right side of the face was more paralyzed than it was a day or two before, but he now protruded the tongue in the median line.

October 9th remained in about the same condition.

On the 10th he understood what was said to him and repeated a few words. If a thing was held up and a name suggested, he assented to it, giving assent to all names, the wrong name as well as the right one. When asked how he felt he said, "Better." Have you headache? "Yes, a little." Where? He put his hand to the left side of his head. What is your name? "Frank Pezel." He was able to name a watch and tell the time of day. The right side of face is more paretic than it was yesterday, but he is able to protrude the tongue in median line.

On October 11th I made a prolonged and systematic examination to determine the degree and character of the aphasia. This was the first day that his mental condition appeared sufficiently clear to make such an extended examination possible. It was impossible to determine whether he recognized all objects seen. This power existed for the most familiar ones. On testing his power to recognize objects presented to him by the other senses, varying degrees of apraxia were found present for some. When a watch was placed against his ear he recognized it at once. On covering his eyes and allowing him to feel objects, he became confused. The senses of smell and taste did not seem to convey to his mind as definite impressions as those of hearing and sight. Some things he used correctly and others wrongly in feeding himself.

His power to recall the names of objects presented to him, by the various senses was defective for many things. By the sense of sight he could recall the names of all familiar objects, such as pencil, coins, watch, knife, tobacco, etc., but those less familiar such as book, scissors, needle, spool, pin-cushion, etc., he frequently made blunders in trying to name them. Watch and coins he recalled the names of when he heard them, but bell and keys were sometimes wrongly named. He made many mistakes in naming objects presented to him, by the senses of feeling, tasting, and smelling. Tactile sense seemed to convey to his mind the least definite impression of all the senses. He understood sounds other than speech better than those of speech, and rarely made a mistake in interpreting familiar sounds. His power to understand speech was very imperfect. He showed no apparent intelligent appreciation of speech, except in a few direct questions that related to his own condition, such as "What is your name? Have you headache? Are you hungry?" etc. To every other question or request he would answer "German." He manifested no appreciation of music. It was learned later that he had never known anything of music. He was unable to call to mind objects named, and consequently could not point them out. He invariably recognized his own name when it was spoken, but other names, such as nurse, doctor, etc., he did not recognize unless they were repeated over several times. He did not recognize a word spelled aloud. So far as I was able to determine, he could not call up mentally the sound of a note, figure, letter, or word, but on this point I could not be certain as it was difficult to get him to comprehend what I desired.

He recognized figures and letters, pronounced words shown him, could read printing and writing aloud, but did not seem to understand what he read. He was unable to recall the objects the names of which were seen. When given a pen and requested to write, he wrote his name, but could not be induced to write anything else. He attempted to write every time that he was requested, but after hesitating a while, his name fairly well written was the invariable result of his effort. He could not write at dictation. He wrote from copy, quite well, both printed and written, and converted printing into script.

In testing his ability to write the names of things seen, heard, felt, smelt, and tasted, he wrote the name of only one. This was whisky. He was shown a pencil, and requested to write its name. He shook his head. He was given sugar to taste, cologne to smell, a pencil to feel, and a watch was held against his ear, but he did not attempt to write the names of any of them. When whisky was presented to him by any of his senses, it invariably caused him to smile, and immediately on my requesting

him, he wrote the word "whisky." He read aloud what he had written, but evinced no evidence of understanding what he had written except the word "whisky," and possibly his own name, although it was by no means certain that he understood what it represented. It was learned afterward that he was very fond of whisky. He could not apparently recognize a letter when his index finger was made to trace it. His mental condition was such that I could not determine whether he could mentally call up the appearance of a figure, letter, or word.

There was no defect in voluntary speech except that it was slow. He could repeat words after another, provided they were uttered very slowly. There was a tendency with him to repeat the first word of a sentence two or three times in repeating a sentence after me. The patient recognized some of his mistakes in writing, but seemed unable to correct them. There appeared to be no special difficulty in the use of nouns, verbs, or other parts of speech. He understood and used gesture expression in speech. He could count, both money and in numbers. He was unable to play a game of cards. He did not seem to be able to recognize differences between cards, but when different cards were shown him he called out the number on the card, and all were spades to him. After he recovered he showed quite a fondness for various games with cards. There was no defect in the field of vision. Sensation was perfect throughout the body.

On October 15th he manifested no difficulty in recognizing objects and their uses. He quite readily named most objects presented to him through the different senses. The only trouble apparent in understanding speech was that the first word or words of a sentence appeared to make the most impression on his consciousness, and these would be repeated two or three times. He read printing and writing quite well, but did not show a comprehensive appreciation of what he had written. He could recall the names of most objects presented to him and wrote them. He wrote at dictation imperfectly, as the first word or words of a sentence were repeated several times in writing a sentence. He understood cards and played games with them.

October 22d, no appreciable defect in speech. He said that he did not fully realize where he was and what had happened until a few days ago. He did not remember that he had seen me, and that I had examined him prior to October 15th. He said when he fully regained consciousness that he found he could not speak as formerly in Bohemian. Before his injury he had spoken as well in Bohemian as in English, but now it was quite difficult for him to think in his mother tongue.

Throughout the period of his illness, beginning September 21st, and ending about October 15th or 20th, his temperature was practically normal, and equal on the two sides of the body, except on the occasions noted in the clinical history just given.

The points of special interest in the above case are, the localizing value of the aphasic symptoms, the external pachymeningitis and convulsions, the mind and word deafness, and the partial loss of the language which he had first learned, and which he had used exclusively for the first thirteen years of his life.

On September 22d, when I was asked by Dr. Rogers to see the case with him, by the auditory defect of speech alone, before the wound was exposed, the lesion was located in the first and second temporal convolutions. On finding a depressed piece of bone lying against these convolutions, without any extravasation of blood, it was thought probable that there was no deeper lesion. Still the auditory speech disturbance did not improve. A few days later, when the general convulsions began, it was decided by Dr. Parkhill to reopen the wound. On exposing the dura and finding it covered with recent exudate, partially organized, this seemed to be sufficient to give rise to the convulsions, but I argued that the pressure from this was not great enough seriously to interfere with the function of the temporal convolutions. After the dura had been cleansed and incised, no exudate was found on the internal surface of this membrane, and no cause for pressure on the cortical substance of the brain was discovered. It became evident that there must be some subcortical lesion to account for the mind and word deafness. The pulsation of the brain was just apparent, but very feeble. At my request Dr. Parkhill cut into the brain substance and exposed dark, partially clotted blood. After this, when the broken-down brain substance had been removed, improvement became apparent as soon as the effects of the anesthetic had worn off, and two or three days later the mind deafness had greatly lessened, and soon disappeared entirely. The word deafness, on the other hand, remained for at least three weeks longer. Auditory speech disturbances as localizing symptoms will be discussed at greater length in the summary which is to follow the report of this series of cases.

How are we to account for his failure of memory for his mother tongue to a greater extent than for the language that he had acquired after his thirteenth year? In amnesia it is found that memory fails most for things recently acquired, and for those that were learned at more or less remote periods it may be well preserved. In senile dementia the incidents of early childhood and youth may be remembered with great vividness, and prattled about by the dement, yet he may not be able to tell what he has eaten an hour before. In the delirium of fevers, persons, who are foreign born and who may not have had occasion to speak their native tongue for years, will speak exclusively in the language of their childhood. The manner in which memory fails is so invariable that in a case of suspected feigning of amnesia, if recent events are well remembered and the mind is a blank for things learned in early life, we do not hesitate to pronounce the suspect an impostor.

Is this case, then, an exception to the rule? I think not. During the patient's delirious state he talked almost exclusively in the Bohemian language, and only used the English after the receipt of the injury, during the time intervening between this and the development of the delirium, and again as the delirium began to subside, English was substituted for the Bohemian. It

was not until several days after recovery appeared complete that he volunteered the information concerning the difficulty he experienced in thinking in his mother tongue. On inquiry I found that during the five years he had been in Colorado he had not had occasion very frequently to speak the Bohemian language, and from his thirteenth year up to the time he had come to Colorado he had spoken Bohemian only at home, and English with his playmates and school companions.

The facts are these, in his normal condition, he could talk best in that language which he used most, and for a number of years had employed almost exclusively, but in his delirious state the brain-cells reproduced from the memories made upon them when they were most impressionable. The injury to his brain had left him weak, and voluntary recollection was best for those things with which he was most familiar at the time.

While his condition of memory impressed me as being peculiar at the time he volunteered the information concerning it, yet on reflection all mystery disappears.

MEDICAL PROGRESS.

To Preserve Rubber Instruments it has been recommended that they be kept in a three per cent. solution of carbolic acid. Should they not be used frequently, they should, from time to time be removed and stretched.—(*Zeitschr. f. Krankenpfl.*, April; *Munch. med. Woch.*, 1896, 16).

Osteitis in the Course of Typhoid Fever Disappearing with Defervescence.—At a recent meeting of the Societé des Hopitaux WIDAL (*Presse Médicale*, 1896, No. 26, cxxvi) reported a case of typhoid fever in which on the twenty-seventh day of the attack, with the temperature hovering about 102.2°, a swelling half as large as a hen's egg was observed arising from the left ninth rib posteriorly, just below the angle of the scapula. The mass was unyielding to pressure and as hard as bone. The overlying tissues were somewhat reddened. For several days the formation continued to increase in size; then as the temperature declined it grew smaller and smaller, finally disappearing entirely in the first days of convalescence and leaving a slight depression. It was pointed out that the inflammatory lesions of bones associated with typhoid fever appear, as a rule, after convalescence has been established, and not, as in the case reported, in the course of the attack.

The Influence of Injections of Serum upon Articular Rheumatism.—WEISS (*Centralblatt für innere Medicin*, 1896, No. 17, p. 417) reports the results obtained in the treatment of acute articular rheumatism from the employment of blood-serum secured through venesection from individuals convalescent from that disease. Ten cases were thus treated, twenty-two injections in all being given. Following nine injections the articular affection was favorably influenced, as regards both swelling and pain. After six injections no influence upon the morbid process was observed, and following three the condition was aggravated. In seven instances the injection was followed by the reduction of temperature and sweating. The amount of serum employed varied, on an average, from a dram and a half to two drams and a half.

THERAPEUTIC NOTES.

Treatment of Gastric Ulcer Complicated by Hemorrhage.—The patient should assume the recumbent posture, with complete rest, not leaving his bed for any purpose, and the stomach should so far as possible be immobilized. Complete abstinence by the mouth should be observed, not even ice being permitted. An ice-bag or cold compress may be applied to the epigastrium with advantage. Should the bleeding persist, a syringeful of the following solution should be injected beneath the skin over the region of the stomach:

℞	Dialized extract of ergot . .	15 grains
	Distilled water	75 minims
	Carbolic acid	1½ grain

Nourishment is to be withheld even by the rectum. If the patient is debilitated or the nutritive condition is alarming, recourse may be had to an enema of the following constitution:

℞	Milk	8 ounces
	Yolk of egg	number 2
	Sodium chlorid . . .	a teaspoonful
	Red wine . . .	a tablespoonful
	Starch	a tablespoonful

This is to be warmed and injected slowly twice or thrice daily after a lavement of water. To overcome pain codein hydrochlorate or phosphate may be employed in dose of from ½ to ¾ grain. If constipation demand intervention enemata of soap-suds, glycerin, olive oil, or castor oil may be employed. The patient remains abed for about a week thereafter, the diet consisting of milk and lime-water or milk with a little tea or coffee, beef tea, bouillon, peptones, meat solution, emulsions of the white or the yolk of egg, carbonated waters; but excluding cocoa, chocolate, and wine. In the second week following the hemorrhage eight ounces of hot Carlsbad water are to be administered night and morning, with from a dram to an ounce of Carlsbad salts. Warm compresses are to be kept applied to the abdomen to the point of inducing redness of the skin.—*Journal de Médicine de Paris, 1896, No. 14, p. 168.*

Treatment of Attacks of Migraine.—1. Diminish the hyperesthesia of the painful area by a spray of some local anesthetic.

2. Immediately afterward practise compression of both temporal arteries, preferably by means of rings of cork held in place by a gauze bandage.

3. At intervals of two hours for four doses a cachet is given containing of

Antipyrin	7½ grains
Spartein sulphate . . .	⅓ grain
Caffein citrate . . .	1½ grain

4. If there is gastric derangement the foregoing combination may be administered by enema.—*Critzmann, Presse Médicale, 1896, No. 31, p. 185.*

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THE PATHOLOGY OF ADDISON'S DISEASE.

WHILE the pathology of the symptom-complex covered by the designation Addison's disease is yet involved in obscurity there is growing reason to believe that the disorder is dependent upon disease of the suprarenal bodies—in some instances of an obvious nature, in others beyond our powers of observation. Further, in a certain proportion of cases changes in the suprarenal bodies are found in the absence of recognized symptoms of Addison's disease. Among the problems therefore awaiting solution at the hands of the pathologist are the extent and nature of the suprarenal disease necessary for the development of symptoms, on the one hand, and the ability of other organs to replace the function of the suprarenal bodies—whatever this may be—on the other.

Occasionally the suprarenal bodies fail to attain their normal degree of development; rarely they are entirely wanting. These conditions are usually associated with other developmental deficiencies, more especially anencephaly and hemicephaly; but as a rule they are not attended with symptoms of Addison's disease.

Hansemann, in *Berliner klinische Wochenschrift*, 1896, No. 296, has reported a case of Addison's disease in which the essential lesion consisted in what was believed to be aplasia of the cortex of the suprarenal bodies. The patient was a man, thirty years old, who presented profound weakness, in addition to impaired nutrition and slight jaundice. He had conspicuously dark hair and almost black irides, so that the swarthiness of his complexion was not especially noticeable. The scrotum and the mammillary areolæ, however, presented distinct pigmentation; so also did some old scratch-marks and the remains of former acne-pustules. The palate too presented a line and a spot of discoloration. The patient grew weaker and weaker and in a short time succumbed. Upon *post-mortem* examination the heart was found to be in a state of brown atrophy. At the apex of the left lung was a small slate-colored cicatrix, together with several small cheesy areas. In the intestines the follicles were swollen and the mucosa swollen and reddened in spots, with a number of hemorrhages. The suprarenal bodies were adherent to the surrounding structures. In their superficial extent they were of about normal size; the right was perhaps undersized. Conspicuous, however, was the reduction in thickness. On section no trace of cortex could be found. The whole gland was represented by reticular structure, containing large cells with pigment. In places a slight degree of small-cell infiltration was visible. Nowhere was there any considerable new formation of fibrous tissue and no noteworthy alterations were detected in the nervous system.

THE EVOLUTION OF BELLEVUE HOSPITAL.

BELLEVUE HOSPITAL, as the great charity hospital of this city, has had a very unique history. In reviewing its development from an almshouse to one of the most reputable public institutions, it is held by good authority that this hospital illustrates the method of properly governing these charities, of which there is a large number in this country. As a rule, they are under the exclusive control of the almshouse authorities of the counties, and hence are subjected to the pernicious influences of the lowest grade of partisan politics. The question which is agitating the

profession in many localities is as to the proper measures to be adopted to rescue these charities from their present degraded condition and place them on a secure basis for future proper development.

A brief notice of the progress of Bellevue Hospital, which has passed through every stage of evolution, from the most disreputable poorhouse to a hospital of the first rank as regards its general government and the character of its medical service, may prove useful.

This hospital was opened in 1816, eighty years ago, as the great Charity Hospital of the city. For ten years it was part of the almshouse proper, and under the same management. During this period the hospital became so notorious for its vices and abuses that its very name was a "terror" among the poor. From 1826 to 1847, a resident physician was the nominal head of the hospital, but as he was simply the agent of the governing board, few reforms were effected. In 1847, the medical profession undertook the task of reorganizing the medical service, and succeeded in having a medical board, composed of competent physicians, appointed, with enlarged powers over the management. This was the beginning of real improvements in the hospital. The resident physician was removed, competitive examination of the resident staff was instituted. The introduction of competent medical men into the management of the hospital was of immediate benefit, for it led to the proper care of patients on the part of the resident staff, more exactness in the administration of remedies, strict attention to the sanitary condition of the entire building and grounds, and a careful oversight of all the details of nursing, feeding, and general discipline. The entire *morale* of the institution was changed, and in every part improvements were noticed. The advance of the hospital from that date to the present, though gradual, has been continuous and uninterrupted.

In the period 1850–1860, clinical instruction was given by the visiting staff, and students were attracted in such increasing numbers that in the decade 1860–1870 the hospital became the great center of clinical teaching of the medical schools. It brought into the visiting staff a still higher order of medical men, and into the resident staff a better class of recent graduates. It concentrated upon the individual patient far more thought and study, both in the discovery of the nature of the disease and in exactness in the employment of remedies. Finally, it introduced into all branches of the service that degree of system and discipline so essential to successful hospital management. In 1872 a training school was established, which revolutionized the ward management and perfected this branch of the service.

The last stage of progress in the evolution of the hospital was the more intimate relation of the medical schools to the management. The service was divided so that each of the colleges had exclusive control of a division, and one division was assigned to members of the staff unconnected with the schools. With this change, the highest order of medical service was secured. The visiting medical staff was composed of the most advanced teachers in their several branches, while the positions in the resident staff became the prizes in the schools most sought after by the students. Thus organized and managed, Bellevue Hospital, according to the report of the Committee on Hospitals of the State Board of Charities, is regarded as a model of excellence.

It will be possible for but few of the charity hospitals of the country to adopt the full scheme of government above outlined, but they can generally be placed under medical boards composed of competent practitioners of the locality. The first step in reform consists in the removal of the medical service of the hospital from the control of the local poor authority to that of the profession. The next step will be the introduction of the trained nurse, which will at once relieve the ward of its hereditary almshouse abuses and scandals. But where the hospital can be utilized for teaching, the crowning act of reform will be the subordination of the hospital management to the elevating and disciplinary influences of the medical school.

A CRITICAL RESUME OF RECENT PROGRESS IN DERMATOLOGY.

PEMPHIGUS.

A GREAT deal of attention has been given of late to the subject of pemphigus, which has always been a fruitful source of discussion. In

time past every bullous eruption was called a pemphigus, qualified by some adjective. At one time authorities described nearly one hundred different forms of this disease. A bulla is one of of the primary lesions of the skin and may form under many conditions and in a number of diseases. Happily the present tendency is to the simplification, as far as may be, of dermatological disease classifications, and it is probable that, in course of time, the number of forms of pemphigus will be greatly reduced, much to the benefit of the student of dermatology. In the fifth meeting of the Deutsche Dermatologische Gesellschaft, pemphigus was one of the subjects for discussion. Kaposi, who is always conservative, upheld the view that pemphigus was a definite disease, essentially malignant, and chronic, with a death rate of probably over forty per cent. Its victims, he said, died of amyloid degeneration of the organs, parenchymatous alterations of the heart muscle, diarrhea, and pneumonia. One form of pemphigus may change into another form, showing that all forms are but parts of one disease. He saw no reason for the establishment of such diseases as dermatitis herpetiformis, and pemphigus vegetans. He had never seen a case that he was willing to recognize as dermatitis herpetiformis, as separate from pemphigus, and would regard that disease as described by Duhring as including a number of well-recognized diseases, such as urticaria papulo-bullosa, annularis, gyrata; lichen urticatus, and the bullous form of erythema multiforme.

Rosenthal, who followed Kaposi in the discussion, excluded from pemphigus a number of cases that had been included under it, such as all accidentally bullous affections, as urticaria; all bullous dermatitides; the bullous forms of syphilis and leprosy; pemphigus hystericus; erythema bullosa; hydroa vacciniforme and varioliforme; epidermolysis bullosa; dermatitis herpetiformis; herpes gestationis and impetigo herpetiformis. He believed in the identity of dermatitis herpetiformis. He regarded pemphigus foliaceus and pemphigus vegetans as forms of pemphigus vulgaris, and pemphigus acutus as an infectious disease ending fatally in most cases. Pemphigus vulgaris, he held, was a subacute or chronic disease, exceedingly rebellious to treatment, presenting single-chambered bullæ, whose seat is below the corneous layer of the skin. Its prognosis was favorable, if of the subacute variety, bad if of the chronic variety.

Schwimmer recognized the identity of dermititis herpetiformis. Neumann, on the other hand, did not recognize it, but upheld that pemphigus vegetans was a disease sui generis, which was natural, as he was the father of the name.

At the same meeting Eppinger of Grätz, read a paper on the pathological anatomy of pemphigus, in which he stated that his investigations led him to believe that the disease was due to the development of toxins, which first affected the peripheral part of the cutaneous nerves, and later the central nervous system. Through alterations in the terminal ends of the nerves alterations in the skin took place. At first there were changes in the blood-vessels with serous exudation or even hemorrhages.

The whole discussion was a most interesting one, and cannot fail of being helpful. In the present unsettled state of our knowledge it seems to me best to regard as pemphigus only those cases marked by the appearance of bullæ with little or no erythematous halo, that run a subacute or chronic course, and tend to deteriorate the general condition of the patient. Experience of dermatologists in this country certainly upholds our distinguished countryman in establishing dermatitis herpetiformis as a separate disease.

Many of the cases reported as acute pemphigus are certainly only instances of what we here recognize as the bullous form of impetigo contagiosa. Pernet and Bulloch (*Brit. Journ. Dermat.*, 1896, viii, p. 157), report a case of acute pemphigus that certainly is not contagious impetigo. It occurred in a butcher, and apparently originated at the site of a scar, and was probably due to a specific micro-organism. Fifteen weeks after the injury a bulla formed at its site, and nine days later a general eruption of bullæ occurred. Within seventeen days the man was dead. The authors have collected seven other cases of a general bullous eruption following, or presumably following injuries, all being butchers, in six of which death soon occurred. The period elapsing between the time of the injury and the appearance of the bullæ varied from five weeks to three months.

By the French school skin diseases have always been regarded as local manifestations of general disease conditions, while German dermatologists, notably those of the Vienna school, have taught for years the purely local origin of most dermatoses. Within the past three months two papers have appeared, one in France and one in this country, treating of dermatoses occurring in connection with general diseases. Frèche, of Bordeaux (*Journ. mal. cutan.*, 1896, viii, p. 4), discusses the *eruptions of hysteria*. These he finds to be dermographism, erythema, ecchymoses, and bloody sweats, chronic urticaria, and eczema. All these diseases, of course, occur also in non-hysterical subjects, and have no special marks to distinguish them when in hysterical ones. He believes that pemphigus and gangrene are more frequent in hysterical than in non-hysterical subjects, the latter indeed being seen in them especially. The description he gives of the former would lead me to think that his cases were of the disease we call dermatitis herpetiformis, because of the perodicity of its outbreaks, its patchy character, and the itching, smarting, and burning that attends it. All these symptoms are characteristic of Duhring's disease. His gangrene, he says, has been described by Kaposi as zoster gangrenosus, and by Renault as urticaria gangreneuse. In it a red, white, or anemic lesion, slightly raised above the surrounding skin appears at some part of the surface of the body, and shortly after another patch will develop at a distant part. The lesion turns blue, then black, breaks down and forms an eschar with a more or less suppurating line of demarcation. After the fall of the eschar a granulating ulcer is left that sometimes heals readily, sometimes only after a long time, and leaves a kelodal scar. The initial lesion may be a bulla, which becomes umbilicated, black, and gangrenous. The disease is always attended with pain, burning, or smarting, which disappear when the lesion forms.

The other paper is by Morrow of New York, and is a very complete study of diabetic eruptions. (*Med. Rec.*, 1896, xlix, p. 508). He divides his paper into two parts. The first treats of those diseases that are symptomatic of diabetes, namely: certain functional diseases of the skin as anidrosis, asteatosis, hyperidrosis, puritus, erythema, eczema, balano-posthitis, phimosis, furuncles, carbuncles, gangrene, and xanthoma diabeticorum. The second part of his paper deals with those diseases that occur incidentally and with comparative frequence in diabetes, and show a tendency to become better and worse with the fluctuations of the sugar in the urine. These are acne cachecticorum, chronic papular urticaria, impetiginous and lichenoid eruptions, psoriasis, dermatitis herpetiformis, mal perforant, erysipelas, and dermatitis diabetica papillomatosa. It will be observed that in both of these groups of dermatoses occurring in general diseases we have a bullous eruption, which the Frenchman calls pemphigus, but which the American recognizes as dermatitis herpetiformis. This is of special interest, taken in connection with the discussion noticed before. It is by such studies we may at last succeed in answering the question, What do we understand by pemphigus?

George Thomas Jackson, M.D.

ECHOES AND NEWS.

The next annual meeting of the Medical Society of New Jersey will be held in the Hotel Brunswick, Asbury Park, Tuesday and Wednesday, June 23 and 24, 1896, commencing at 11 o'clock A.M. on Tuesday.

At the annual meeting of the Washington State Medical Society, held in Tacoma, May 19th and 20th, Dr. R. L. Thomson of Spokane, was elected president, and Dr. J. M. Semple, of Medical Lake, secretary. The next meeting will be held in Spokane, May, 1897.

The silver lancet case and lancets, formerly used by Jenner and bearing his name, have been presented to the Royal College of Surgeons, to be placed among the other Jenner relics in the college museum.

The next meeting of British Medical Association will convene at Carlisle on July 28th and continue four days. The address in Medicine is to be delivered by Sir Dyce Duckworth, M.D., LL.D., and that in surgery by Roderick Maclaren, M.D.

At the special request of Coroner Hoeber of New York City, the police are instructed to leave untouched the effects and surroundings of any person dead from suicide, homicide, or suspected poisoning, until the coroner or his representative shall have seen the body. There already exists a law to this effect but it has been commonly disregarded.

A dispatch from London is authority for the statement that the Sultan is suffering from a tumor of the spine. He has refused operation for its removal because

his surgeons are unable to assure him that the procedure is not dangerous.

DR. HENLE, Professor of Anatomy at the University of Tubingen died on May 23d. He was one of the best known of modern anatomists and recognized as one of the best authorities upon the subject. He was, in the early part of his career, assistant to the physiologist Donder's in Holland, and was afterward elected professor in the Universities of Marburg, Rostock, Prague, and Tubingen respectively.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS is to have a special section devoted to the discussion of the alcohol question. This makes sixteen sections into which the Congress at Moscow is to be divided. It may be of interest to mention in this connection that a new method of treating alcoholism is being subjected to an extensive test in Bellevue Hospital, New York, at the present time. The plan is the result of the study of the subject by a member of the New York Academy of Medicine. It has been explained to the hospital authorities who are convinced of its harmlessness and possible value and have set aside one of the hospital wards for the purpose of giving it a thorough test. The method is not to be made public until it has proved itself efficacious.

AN idea prevalent among obstetricians that from the frequency of the fetal heart-beats the sex of the child can be foretold is now refuted. This oft-quoted theory seems to have had its origin in about fifty observations made by Frankenhauser, who stated that in male infants *in utero* the average rate was 124 a minute while in females it was 144. An observation including one thousand cases at full term at the Boston Lying-in Hospital has proven the disparity between the heart's action in male and female fetuses to be about 1½ beats. Knowledge obtained by counting the pulse rate is not reliable as data in determining the sex.

PROFESSOR PELLMANN of Bonn University, Germany, has made a special study of hereditary drunkenness. He has taken certain individual cases, a generation or two back, and has traced the careers of children, grandchildren, and great-grandchildren in all parts of the present German empire until he has been able to present tabulated biographies of the hundreds descended from some original drunkard. The last person whom Professor Pellmann has immortalized thus in medical literature is Frau Ada Jurke. She was born in 1740, and she was a drunkard, a thief, and a tramp for the last forty years of her life, which ended in 1800. Her descendants have numbered 834, of whom 709 have been traced in local records from youth to death by Professor Pellmann. Of the 709, he found 106 were born out of wedlock. There were 142 beggars, and 64 more who lived from charity. Of the women, 181 led disreputable lives. There were in this family 76 convicts, 7 of whom were sentenced for murder. In seventy-five years this one family rolled up a big bill of costs in almhouses, trial courts, prisons, and correctional institutions. Professor Pellman says this bill, which the authorities of Germany and therefore the taxpayers have paid, has been at least 5,000,000 marks, or about $1,250,000.

THE cheap restaurant started by the Clark Thread Company of Newark, for the benefit of its employees has been abandoned because the employees failed to patronize it. The restaurant was started last fall, and was run at a loss for seven or eight months. During the winter the patronage was encouraging, but when warm weather came the trade diminished. The object of the restaurant was to encourage the operatives, and the girls especially, to eat sustaining and wholesome food prepared in a scientific manner, but the young women resented the absence of crullers, doughnuts, and pie, and sneered at the nourishing stews, soups, etc. The prices were very low and the quality of the food was of the best, while there was considerable variety. The absence of pie and cake doomed the enterprise, however. Some practical instruction in physiology in our public schools might avail to correct such mistakes.

THE last calamity to befall Gloucester, England, is a raid upon it by the quacks. The *British Medical Journal* has the following note regarding the latest conditions at that place: "The isolation hospital continues quite full with 296 patients, in addition to whom a large number have still to be treated at their own homes. As is usual in such cases, the city has been visited by all sorts of 'professors' of the healing art, each of whom declares his own particular nostrum to be infallible, not only in curing but in preventing an attack of smallpox. Under the patronizing influence of the local daily paper which has for so many years done its best to discredit vaccination, the advocates of these panaceas have been allowed free scope for making their claims known to the public in its news and correspondence columns. It need, therefore, be no subject for surprise that the hopes thus unscrupulously held out have been grasped at by the unfortunate victims of the disease and their friends, and that the noble army of 'quacks' is doing a brisk trade just now in the city within the precincts of whose cathedral the statue of Jenner looks down on this turmoil of noisy pretenders with the calm confidence of true science."

CHIEF SURGEON DR. J. F. VALENTINE, of the Long Island Railroad, is engaged in organizing a hospital department for the employees of that corporation on the plan of co-operative support, that is so well advanced among certain of the large Western lines. The Atchison, Topeka and Santa Fé Company furnishes hospitals at various towns along the line of the road. The expenses of maintenance are secured by assessments of from 25 to 50 cents a month on each employee, the amount depending on the salary received. The payment of this assessment insures the best of treatment in case of accident or sickness. The Plant System, at the South, has adopted an additional feature, namely, the hospital-car, developed under the direction of Dr. F. H. Caldwell, chief surgeon of the Plant System. These hospital-cars are scattered along the road at division points. In case

of an accident one of these cars is dispatched to the scene at once, and the wounded are cared for properly and immediately. An operating room in the car is fitted with a glass-topped table and all the appliances for performing asceptic operations. There is a consultation room and a larger apartment, fitted with cots and hammocks, in which the injured may be conveyed safely and comfortably to the railway hospitals. It is proposed to have these hospital-cars so located that one can be sent to any point on the road within two hours. A supply of stretchers is aboard each of the hospital-cars, on which the wounded may be removed from the wreck. Each car will have accommodations for more than a dozen patients. The intention of Dr. Caldwell is to use the hospital-cars chiefly to transport the wounded to hospitals. The operating room will be used only when the indications are in favor of immediate operation.

THE following is offered by the *Journal of the American Medical Association* as evidence of "a recruit for Achilles Rose." A new style of prescription writing is recommended by Dr. Loeffler in the *Aerzt. Korrespondenzblatt*. The author calls attention to the fact that in prescribing the newer remedies, the names of most of which are familiar to the general public, the customary writing of prescriptions in the Latin language does not protect the physician from inconvenient criticisms of laymen, so that it often would seem advisable to adopt a style less intelligible to most persons. To this end Dr. Loeffler has used for sometime the Greek alphabet though still retaining the Latin nomenclature, and in all the apothecary shops of Dresden his prescriptions are readily understood, *e.g.*, he prescribes antipyrin as follows:

℞ ἀντιπυριν 1.0
Δ. Ταλ. Δωσ. Νω. χ.
Σ. Daily, etc.

WESTERN MEDICAL REVIEW is the name of a new monthly medical journal, edited by George H. Simmons, M.D., and published in Lincoln, Neb. We are in receipt of Nos. 1 and 2. They are fresh and breezy, first-class, clean, and every way up-to-date. We welcome the *Western Review* to the ranks, and predict for it a most successful career, and a future full of usefulness to the profession of Nebraska and the West.

THE diagrams furnished by the Chicago Board of Health with the March, April, and May monthly reports show, in graphic manner, the sanitary quality of the water and the average daily deaths from the diseases affected thereby for a period of twenty-four weeks—from the week ended December 21, 1895, to the week ended May 30, 1896, inclusive, Examination of these diagrams discloses three periods of several successive weeks each, to-wit: first, from December 21 to January 25—six weeks; second, from February 22 to April 2—seven weeks; third, from April 11 to May 30—eight weeks. During these periods the deaths from the acute intestinal diseases—also shown on the diagrams—were 206, 137, and 258, respectively. The water supply was "suspicious" or "bad" during the first and third periods, with an aggregate of 464 deaths, or a daily average for the fourteen weeks of 4.7. The water was "usable" or "good" during the intermediate period of seven weeks with an aggregate of 137 deaths, or a daily average of 2.8. The higher death rate of the first and third periods can be attributed to no other cause than polluted water. Applying to the entire year the figures of the twenty-four weeks covered by the diagrams—which is certainly a sufficiently long period to generalize from—we should have with a good sanitary quality of water, 365 days x 2.8 deaths = 1022 total deaths; with a bad sanitary quality of water, 365 days x 4.7 deaths = 1715 total deaths. Excess of deaths due to polluted water, 693, at $5000 each = $3,465,000. This sum represents the interest at five per cent. on a capital of $70,000,000. How much of this amount would be required to complete the drainage channel, build intercepting sewers, and insure a pure water supply the year round?

IT is reported by Dr. Audry, of the Toulouse Faculty, that by the action of radiant heat from a thermo-cautery, which is brought near but not in contact with a soft chancre, the process is converted into a simple ulcer. The usual application of a cautery is of course followed by an eschar that slowly separates, whereas the method of Audry avoids this inconvenience and is quite as effective.

THE death of Sir George Johnson, M.D., F.R.S., Physician Extraordinary to Her Majesty the Queen, occurred on June 3d, after a brief illness.

CORRESPONDENCE.

THE NEW URETHROSCOPE—DR. HAWKINS' REPLY.

To the Editor of THE MEDICAL NEWS:

DEAR SIR: I have always regarded the name of Otis with the most sublime respect, and deeply regret the fact that I am constrained to differ with one bearing that great name, and am liberal enough to acknowledge a mistake when I have made it. In regard to the criticisms of Dr. W. K. Otis of my Urethroscope, if I have been guilty or claiming the results of some other person for myself I regret it and it is unintentional, but I think if Dr. Otis will kindly reread the description of the instrument he will find that it encroaches on no one's previously acquired territory.

I may have been hasty in passing my opinion on Dr. Otis' "Perfected" Urethroscope, as it is possible that that there may be a difference in the instrument as made by me and the one made under his direct supervision. The instrument which I used was made from the description published by Dr. Otis in *The New York Medical Journal* of December 17, 1892. After using this instrument for a while I hit upon the idea of applying the principle of the ophthalmoscope to the urethroscope, with the result described in THE MEDICAL NEWS of May 23d. I was not aware that an instrument of this description had ever been made, and if the original instrument of Dr. Otis, as shown in Culver & Hayden's Manual of Venereal Diseases, is reproduced in my instrument I would cheerfully apologize to the doctor. But I am unable to see the similarity, as I use a mirror with a perfor-

ated center as is used on the ophthalmoscope, while that on the Otis instrument is a solid mirror, as on the Leiter, set low enough for the returning rays from the tube to strike the operator's eye. The doctor has observed a technicality in my wording of the sentence regarding the quantity of light I claimed was thrown down the tube with my instrument. The mirror used on my instrument is about the same size as that on the Leiter, 1½ inch. With my instrument, on actual measurement, a cone of rays whose base, on the face of the mirror, is about a half inch in diameter, is all the light that is actually used, the remainder being spread out upon the face of the plate on the Klotz tube. Now with my instrument the light is gathered from *all around* the central perforation *in the shape of a cone*, whose radius at the base is one-fourth inch. With the Leiter plan, using the mirror set below the path of the rays, the light is gathered from *less than one-half as much mirror surface*. It is then only reasonable that with the same lamp more rays will be thrown down the tube than with the Leiter. I have used in these experiments a Klotz tube, No. 26 F., 4½ inches long. I use a four-volt Edison electric lamp of one candle-power and get a light far superior to that obtained with the Leiter instrument. This last assertion has been verified by other observers with my urethroscope.

I do not deny that a bull's-eye condenser will throw a powerful light; such a statement would be ridiculous, but the trouble I experienced with the instrument made from Dr. Otis' description of his "Perfected" Urethroscope was to intercept the return rays as the condensing apparatus obstructed the path. It is, therefore, necessary to lower the condenser, as with the Leiter instrument, and look over the top of it.

Anyone, not inclined to quibble, can at a glance see the difference between my instrument and that of Desormeaux, which was invented before the days of the practical application of the electric light. The U. S. Patent Office recognizes and issues letters patent on "new combinations of old parts, whether relating to material objects or to processes."

I stated in my paper that a portion of the mirror in the Leiter instrument was removed to complete the axis of vision. My wording might have been clearer, the meaning I wished to convey being that set forth above—the removal of a portion of the mirror below the path of the rays in order to allow the operator to look over the instrument, caused *not a "little more than one-half* of the light thrown in the direction of the mirror" *to be wasted*, but *all except those rays from the upper part of the mirror*, a little more than a quarter by half an inch in area, as stated above.

That the principle of this instrument is correct is shown by the exclusive use of the principle by the ophthalmologist, and the almost exclusive use of it by the rhinologist, laryngologist, otologist, and many genito-urinary surgeons who do not possess a urethroscope—*all* using a mirror *with the rays of light passing through the central perforation.*

JOHN A. HAWKINS, M.D.
105 JACKSON STREET, ALLEGHENY, PA.
JUNE 9, 1896.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, June 4, 1896.

JOSEPH D. BRYANT, M.D., President.

DIPHTHERIA ANTITOXIN.

THE discussion of this subject was begun at a regular meeting of the Academy, May 21st, by JOSEPH E. WINTERS, M.D., who read a paper upon

CLINICAL OBSERVATIONS UPON THE USE OF ANTITOXIN IN DIPHTHERIA; AND A REPORT OF A PERSONAL INVESTIGATION OF THIS TREATMENT IN THE PRINCIPAL FEVER HOSPITALS OF EUROPE, DURING THE SUMMER OF 1895. (SEE PAGE 685.)

The meeting then adjourned to June 4th. The discussion was continued by P. H. ERNST, M.D., of New York, who read a paper upon

EXPERIENCES WITH THE ANTITOXIN.

He reported seventy-seven cases of diphtheria treated by him, for the most part in dispensary practice, since May, 1895. Of these cases, twelve had been treated with antitoxin, eight of them being considered severe and four mild. Of this series, seven died. Of the sixty-five treated without antitoxin, forty-two were considered to be severe. Eleven of the cases were intubated. The number of deaths in this second series was eleven. Dr. Ernst said that he had at first expected much from the antitoxin, but finding that it did not appear to have the slightest favorable influence, and that convalescence after its use was especially tedious, he abandoned the treatment.

W. L. STOWELL, M.D., presented the next paper, upon

DIPHTHERIA WITH AND WITHOUT ANTITOXIN. (SEE PAGE 694.)

WILLIAM H. THOMSON, M.D., of New York, opened the general discussion by calling attention to the fact that in estimating the value of a method of treatment for any infectious disease, there were certain unavoidable and important sources of error. For instance, the diagnosis was often a matter of uncertainty; the important influence of individual "soil" must be taken into account, and the virulence of the pathogenic microbes themselves varied very greatly at different times. The opponents of antitoxin had assumed, though most illogically, that this complex antitoxin serum must exert a specific effort, comparable to the action of a chemical antidote, and also that the occurrence of failures with this remedy was proof that it was useless. If such an argument were correct, we would be compelled by the same process of reasoning to conclude that mercury is worthless in the treatment of syphilis, and quinin of no value for the cure of malaria. To decide upon the value of this treatment, reports of many thousand cases must be submitted from many different parts of the world, so as to eliminate local sources of error. Such evidence, he thought, was already at hand. Dr. Thomson then read extracts from hospital reports in various parts of the world, regarding the effect of antitoxin in the treatment of diphtheria. Out of eighty-five

such hospital reports, there had been collected the results of the treatment in 9893 cases of diphtheria, viz., 1820 deaths, or a mortality of 18.3 per cent. In addition to this, fifty-three of the hospitals furnished definite comparisons with the death-rate prior to the introduction of diphtheria antitoxin, which was found to have been 44.3 per cent. It was evident, therefore, that the death-rate in the hospitals had been reduced at least fifty per cent. by the antitoxin treatment. The speaker also presented reports from private practice, aggregating 3760 cases of diphtheria treated with antitoxin, with 296 deaths, or a mortality of 7.8 per cent. Adding together the hospital and private cases, one obtained a total of 13,653 cases, with a mortality of 15.5 per cent. This mortality, Dr. Thomson said, showed that diphtheria antitoxin was not a "specific" in the sense in which Dr. Winters used this term, *i.e.*, a remedy which should give a uniform percentage of recovery all over the world, and should be invariably successful. It would not do to report an occasional failure from antitoxin as an argument against the value of the remedy. He believed that antitoxin had been already proved to be a remedy of great efficacy, and he looked upon the introduction of this new method of treatment as one of the great achievements of this century.

GEORGE L. PEABODY, M.D., of New York, said that it was not fair to argue that because a remedy did not reduce the mortality to the same extent everywhere, that therefore the remedy is useless. No remedy of modern times could stand such a test as that. Statistics of any treatment were largely affected by the fidelity and zeal with which that treatment was carried out. For example, Brandt had collected records of 19,000 cases of typhoid fever treated by his cold-bath method, by all classes of physicians, with a mortality of 20 per cent., whereas in 800 cases treated by the same method, but only by those having faith in the treatment, the mortality was 8 per cent.

Referring to the meeting of two weeks ago, he said that we had been told at that time that a number of cases had died shortly after the administration of antitoxin, and the inference had been drawn that it was because of the administration of this remedy; but we had not been given sufficient details regarding these cases to enable us to judge intelligently as to the cause of death. It was true that in some instances the use of the immunizing serum had failed to prevent the development of diphtheria, but in these cases might it not be reasonable to suppose that the disease had been already in the system, but inactive? Much stress had been laid upon the fact that the physicians who had witnessed the use of antitoxin in the hospitals, had refused to submit themselves to this treatment. Such an argument was not a particularly strong one, but to offset this he would say that last winter he had received a large dose of antitoxin, with no ill effect other than the production of a slight urticaria around the site of the puncture. Some of the serious consequences reported after the use of antitoxin, were probably due to impurities in the antitoxin, but this was rather an argument against these impurities than against the antitoxin, and moreover he had been informed that some of these impurities, at least, could be readily detected, so that this possible source of danger was largely preventable. His experience with the remedy had impressed him with the important part played by individual susceptibility. For example, he had personally injected three patients at the same time, with the same antitoxin, using the same syringe. One of these individuals, an adult, developed a severe urticaria with joint pains, while the other two, an adult and a child, showed no unpleasant effect from the treatment. At the previous meeting he had been led to believe by the speaker of that evening, that it was our duty to listen to and accept all evidence against antitoxin, and close our ears to all reports that were favorable to the remedy.

J. J. KINNION, M.D., of the Marine Hospital Service, sent through Dr. A. A. Smith, a communication, which was read by the secretary. In it, he said, that for the past five years the Marine Hospital Service had been making a collective investigation regarding diphtheria, and had in this way collected records of 131,620 cases of diphtheria and croup, occurring from 1891 to 1894, with 51,820 deaths, or a mortality of 39 per cent. These reports came from 109 cities, and in 1895 the same cities reported 45,690 cases with 11,640 deaths, or a mortality of 25 per cent. The reports indicated that where antitoxin had been used most freely, the death rate had been most markedly reduced. The reports also showed that 2936 cases had been treated without antitoxin, with 1010 deaths, or a mortality of 41 per cent. Of 2400 children who had received the serum for immunizing purposes, only 19 cases of mild diphtheria had developed within a few days, and no ill effects had been noted from the use of the serum.

JOHN W. BRANNAN, M.D., of New York, in discussion presented

A CRITICAL ANALYSIS OF DR. WINTER'S CLINICAL OBSERVATIONS ON THE ANTITOXIN TREATMENT OF DIPHTHERIA. (SEE PAGE 691.)

H. W. BERG, M.D., of New York, said that the probable explanation of the greater frequency of bronchopneumonia as a complication of the cases of diphtheria which had been treated by antitoxin, was that this remedy kept a larger proportion alive for a sufficient length of time to allow of the development of the pneumonia. The much greater frequency of this complication in hospital practice had been noted, and was probably explicable on the theory that it was due to a streptococcus infection. He would explain Dr. Ernst's unfavorable experience with antitoxin, by the fact that his cases had been seen in dispensary practice, and consequently at a late stage of the disease, From the description given by Dr. Ernst, it would seem that these cases had been of a severe type. Dr. Winters had certainly been most industrious in the collection of his facts, but he had unfortunately drawn from them very illogical conclusions. His great argument against antitoxin was that its administration had been followed at times by sudden death. If this were a valid argument, one would expect such a result to be much more common, to say nothing of the fact that sudden deaths were by no means unheard of before the advent of this new treatment. In his opinion, it was incumbent upon the opponents of the antitoxin treatment to prove

that the remarkable results obtained in the laboratory with this remedy cannot be reproduced in the treatment of the human subject. Personally, he had been profoundly impressed with the results of the treatment in his private practice, and he looked upon antitoxin as the most remarkable remedy he had ever used.

A. CAILLÉ, M.D., of New York, said that he had intended to prove that Dr. Winter's communication was devoid of any scientific value, but as that had already been done he desired only to refer to the results of the collective investigation instituted by the American Pediatric Society, and only just now brought to a conclusion. This report has been most carefully prepared, and included 6000 cases from private practice, occurring in all parts of the United States and Canada. In every instance, the diagnosis had been confirmed by a bacteriological examination. The report showed most conclusively the correctness of Behring's claim, that the mortality in diphtheria could be reduced by the use of antitoxin to five per cent. or less. Personally, he had obtained most gratifying results from its use in the treatment of diphtheritic croup. Before using it his death rate in these cases had been about seventy per cent., but recently he had had the pleasure of witnessing the recovery of ten consecutive cases under the antitoxin treatment. History showed that opposition was one of the accompaniments of the evolution of scientific medicine. He would say most emphatically that in his opinion antitoxin had come to stay.

HAROLD C. ERNST, M.D., of Boston, said that experience had emphasized the importance of using a reliable preparation of the antitoxin, and of always taking it from a freshly opened bottle, There had been reported to the Boston Board of Health 1164 cases of diphtheria, which had been treated with antitoxin, Of this number 983 were treated in the Boston City Hospital, with a mortality of 15.6 per cent. For years past the mortality from diphtheria in that hospital had been over 40 per cent. Of the 181 cases from private practice fifteen died, or a mortality of 8.2 per cent. The records showed that the general mortality in Boston for the twenty years past had never been less than 26.5 per cent. until last year, when it dropped to 14.48 per cent. He had also received reports of 346 cases in which the serum had been used for immunizing purposes, and in not a single instance had there been any evidence of paralysis, nephritis, or indeed of any serious consequence. This was good proof of the harmlessness of the antitoxin serum.

GEORGE MCNAUGHTON, M.D., of Brooklyn, said that when he had reported last year the treatment of nineteen cases of laryngeal diphtheria with seventeen recoveries, Dr. Winter's rejoinder had been that that meant nothing. He could now report a total of eighty-nine cases of laryngeal diphtheria treated with the aid of antitoxin, with only thirty deaths. All of these cases had been seen in private consultation practice, from which it was fair to infer that most of them were of a severe type. All but five of the cases had been intubated. On searching his records for purposes of comparison he had found that of the seventy-two cases treated just before the introduction of antitoxin forty-eight had died, whereas of the first seventy-two cases treated with antitoxin only twenty-four had died. He was convinced that this indicated that antitoxin had a definite value.

WILLIAM H. PARK, M.D., of New York, said that one of the strongest points in the statistical argument in favor of antitoxin was that by the use of this remedy the death-rate from diphtheria had been reduced, not merely in one or two localities, but all over the world. Of the 2000 cases immunized by the New York City Board of Health, only two had shown any complications worthy of note, and in only six had the disease developed between the second and thirtieth day. He had spent much time in observing the same cases in the Willard Parker Hospital, as had Dr. Winters, yet he was forced to agree with Dr. Brannan that the clinical picture of these cases, as portrayed by Dr. Winters, was not that which he had seen. Moreover, Dr. Winters had shown an evident lack of care in collecting his statistics, for he had referred to eight consecutive recoveries from laryngeal diphtheria having taken place in the Hospital in December, whereas the Hospital records showed that, as a matter of fact, all the laryngeal cases in this month had succumbed to the disease.

H. HERALD, M.D., of Newark, said that just prior to January 1, 1895, the time of the adoption by the Newark Board of Health of the system of making bacteriological examinations to establish the diagnosis of diphtheria, the mortality from diphtheria in that city had been about thirty-five per cent. After July 20, 1895, the Board had supplied its own antitoxin, and from that date to May 1, 1896, 1039 cases of diphtheria had been reported, with 243 deaths, or a mortality of 23.1 per cent. Of the 653 cases in which antitoxin was used there were ninety deaths, or 13.5 per cent., while in 386 cases in which it was not used, there were 153 deaths, or a mortality of 39.6 per cent. In the Newark City Hospital, before the antitoxin treatment, the mortality from diphtheria had been forty-two per cent.; since its introduction, 16.4 per cent.

HENRY F. KOESTER, M.D., of New York, said that from February 28, 1895, to January 1, 1896, he had used antitoxin in 200 cases in private practice, with 40 deaths, or a mortality of 20 per cent. Of these 200, 36 were laryngeal, and the mortality in this class was 27.7 per cent. Of the 355 cases in which he had employed the serum for immunizing purposes, 4 had developed the disease within twenty-four hours. He had never seen any serious results from the treatment, and now preferred to give an initial injection of as much as 2000 units.

J. MILTON MABBOTT, M.D., of New York, said that so far as he had been able to learn, there had been no very great diminution in the actual number of deaths from diphtheria, and in the few cases in which he had known it to be used in private practice, the disease was of such a mild type that no reliable inferences as to the curative value of the serum could be drawn. Certainly, many cases which did not present the clinical picture of diphtheria were nevertheless pronounced to be such by the bacteriologists of the Board of Health.

JOSEPH E. WINTERS, M.D., of New York, in closing the discussion, said that Dr. H. C. Ernst, in contrasting the death-rates in Boston for the last two or three years,

had neglected to state that there had been 112 more deaths in Boston in 1895 than in 1894. This same criticism applied to almost all the reports received, and it could not be too strongly emphasized that the percentage death-rate was absolutely worthless unless accompanied by the total number of cases and the total number of deaths. A good example of the wide variations in the type of the disease was to be found in the fact that in one year, in Philadelphia, 350 deaths from diphtheria were reported, whereas, three years later, there were over 1400 deaths. In the Willard Parker Hospital, the mortality in the intubated cases since the introductiou of antitoxin was about 68 per cent. In the Municipal Hospital, Philadelphia, the mortality in this class of cases, in 1895, without antitoxin, was 56.3 per cent.

In reply to Dr. Brannan, he would say that, in citing illustrative cases, he had not limited himself to the first few months of 1895 or 1896, but had taken the cases from the entire record, and in presenting them had given the dates of their admission. His first impression of the antitoxin treatment had been obtained from the observation of a case in the Willard Parker Hospital, in the fall of 1894. The patient was a robust young physician, affected with a severe, but uncomplicated diphtheria, yet, in spite of the antitoxin, the case had terminated fatally in two weeks and one day, and apparently without the antitoxin having exerted the slightest favorable influence upon the course of the disease. That same autumn, only five cases had received this treatment at the Hospital. Of this number, four died, and the fifth only recovered after an exceptionally prolonged convalescence.

These facts had impressed him so deeply that he had sought the counsel of the late Dr. A. L. Loomis, and had been advised by him to make public his adverse views regarding antitoxin. He had, however, shrunk from so doing at that time, lest his conclusions might be premature, and he might in this way deprive others of whatever benefit there might be in the new treatment. He had been accused of being prejudiced. That was an awful accusation to make in regard to such a dreadful disease as diphtheria, and those who knew him best were aware that he could not have been brought into the position in which he found himself to-night, had he not been profoundly impressed with the dangerous nature of this so-called remedy. If he could believe that it was harmless, as well as useless, he would never have raised his voice against it. As it was, he felt that in time every member of the Academy would be forced by his own convictions to feel as he did at present on this subject.

ANNOUNCEMENT.

VACANCIES IN THE MEDICAL CORPS OF THE U. S. ARMY.

THERE are at present three vacancies in the medical corps of the United States army, and it is expected that at least three more will occur during the present year. As usual, an Army Medical Board will meet in Washington early in October for the examination of candidates. The requirements for admission to the medical corps are stated in a circular issued by the surgeon-general of the army, dated May 21, 1896, and approved by the Secretary of War, as follows:

"Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth, and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputab' persons as to his citizenship, character, and habits. The candidate mus. be a citizen of the United States, between twenty- twenty-nine years old, of sound health and good char and a graduate of some regular medical college, in dence of which his diploma will be submitted to th board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

"The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate will also be required to certify 'that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required.' Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctable by appropriate glasses, are not causes for rejection.

"The mental examinations are conducted by both written and oral questions, upon:

"1. Elementary branches of a common school education, including arithmetic, the history and geography of the United States, physics, ancient and modern history, and general literature. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry, or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

"2. Professional branches, including anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

"Examinations will also be conducted at the bedside in clinical medicine and surgery, and operations and demonstrations will be made by the candidates upon the cadaver.

"Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are essential to candidates seeking admission to the medical corps of the army, who will be expected to present evidence that they have had at least one year's hospital experience or the equivalent of this in practice.

"To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the 'elementary branches of a common school education,' by a medical officer of the army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board."

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ORIGINAL ARTICLES.

NEPHROPTOSIS—MOVABLE KIDNEY.[1]

BY I. S. STONE, M.D.,
OF WASHINGTON, D. C.;
SURGEON TO COLUMBIA HOSPITAL FOR WOMEN.

By movable kidney, or nephroptosis, is meant a displacement downward of the organ, with more or less latitude of motion in any direction. Such a kidney is generally movable within its ordinary capsule or peritoneal investment, and cannot become a floating kidney which has a mesonephron and is a congenital malformation. The kidney is in some cases quite movable and yet adherent to its capsule, as will be found occasionally when operations are performed which develop this fact. A movable kidney will not always assume a position at the lowest point of a loose capsule, as we frequently experience difficulty in locating them when most wanted—as during a consultation. The erect position favors descent, however, and we can generally succeed in finding such a kidney below the ribs.

Some authors declare that a kidney must be displaced far below its normal site in order to be palpated, and that even this limited descent causes the well-known symptoms due to prolapse. It may be taken for granted that a kidney in its normal site in a thin subject can readily be felt or palpated over the lower half or third of its surface. The organ may descend to the pelvic brim, in fact often does, thus showing great mobility. Any change forward or downward of a kidney means displacement. To this, if mobility be added, we have the condition under consideration.

The writer has never seen a floating kidney, nor a movable kidney, whose lateral motion permitted it to reach beyond the median line. It is to the very movable cases only that the writer has given close attention, such as are supposed to need surgical treatment. The less movable cases are kept under the observation of the family physician, no operation being suggested save when positively and plainly indicated. Authors agree that many women who have neurasthenia, gastrointestinal atony, dyspepsia, etc., have nephroptosis. Some authors claim twenty-five per cent., and others even a higher rate for this class. There is but little truth in the claim that twenty-five per cent. of all women have this disease, if indeed it be a disease. It is true, however, that of the class mentioned above, from ten to twenty-five per cent. have some degree of mobility.

In this country, Edebohls of New York, and Johnston of Richmond, have the credit of first making a report of cases in number sufficient to test the advisibility, propriety, success, and permanence of operations looking toward a relief of this condition, as well as to cure the symptoms attributed to it. Dr. Osler has contributed interesting and indeed valuable clinical information, which may be found in his little book on abdominal tumors.

Frequency.—Edebohls says twenty-five per cent. of his female patients who have had pelvic disease have movable kidney. Other writers agree that a very large percentage of cases occur in persons apparently in good health. Lindner says one in six of the gynecological cases have movable kidney.

It is generally admitted that women are most frequently found to have movable kidney, although many observers have found it in men. It occurs in adults for the most part, between twenty and forty-five years of age. This period includes that period of a woman's life during which her diseases are watched and carefully studied by the obstetrician and gynecologist. Herein lies at least a possible explanation of the frequency at this period. Nephroptosis occurs often in thin subjects. The fat within the capsule has, to some extent, been absorbed. Obviously, fat subjects might have movable kidney, and the patient and physician be quite unaware of it.[1]

Pregnancy, pelvic disorders, and inflammations, abdominal tumors, absence of fat, have been

[1] Read before the Medical Society of the District of Columbia, Wednesday, March 18, 1896.

[1] The writer has never seen a movable kidney in a negress of dark color, and only once in a mulatto.

assigned as being closely related to the etiology of this disorder. The first case observed by the writer was relieved of symptoms due to the displacement during the latter months of pregnancy. It is highly improbable that tumors have much influence upon the mobility of a kidney, unless through pathological adhesions to the capsule. Neither does the writer think corset-wearing responsible for it. But we do find more cases occurring in women who have been the victims of pelvic disease, and according to some authors, of appendicitis. (Edebohls.) Most observers agree that the right kidney is most frequently misplaced on account of its position under the liver. The writer doubts this supposed influence of the liver.

Symptoms.—Anorexia has been present in most cases; actual vomiting in two cases. Pain is not a marked or characteristic symptom of movable kidney.[1] The only case observed by the writer in which pain actually existed had perinephritic disease. Other observers, however, mention severe pain as one of the prominent and most constant symptoms. The writer finds a satisfactory explanation of renal pain in such cases in tortion, or other temporary occlusion of the ureter, with consequent distention of the kidney. Courtin believes the pain due to pyelitis, and consequent nephritic colic. In one case, the writer found a displaced and movable kidney greatly enlarged from occlusion of the ureter by a calculus. So many patients have vague, indefinite, nervous, and dyspeptic sensations or symptoms, that it is not now thought possible to say any symptoms are pathognomonic. In the absence of a tumor it is impossible to say that such a condition exists. But those having given the subject careful attention, occasionally find explanation for various functional derangements of the vasomotor system, indigestion, gastralgia, or other epigastric or abdominal pain. All of my cases, including one in a male subject, had neurasthenic symptoms. One case may be mentioned to show how a patient can have peculiar, although in her case positive, symptoms enabling her to suspect the displacement of the kidney before its actual detection by the physician or herself. So closely related are the symptoms of displaced kidney to those of neurasthenia that a search for this abnormality is in every such case deemed important. Especially important is this in the absence of other explanation of neurasthenic symptoms. Given a neurasthenic, with emaciation, pelvic disease, such as ovarian or uterine inflammation, etc., we may expect to find many of these women with one or both kidneys movable. I am led to believe from experience in a recent case that epileptiform seizures may be exaggerated when the patient has a movable kidney. In one case, at least, the marked improvement following a nephrorrhaphy would justify the above statement.

Diagnosis.—A misplaced kidney is usually easy of detection, and its presence in a new position can be demonstrated. It is important to exclude distended gall-bladder or tumors of the liver, if the right kidney is in question. The spleen could not easily be mistaken for a kidney, unless enlarged or floating. Percussion is of but little value in locating a kidney anywhere, even in its normal position. Intestinal, omental, or pyloric tumors must all be considered, but, in each of these, concomitant symptoms will aid in the diagnosis. The characteristic and important test is the "slip," which all clinicians agree is pathognomonic. It is an available and pretty reliable test. It is obtained by bimanual palpation, one hand in the loin, the other on the abdomen. The pressure, beginning just under the rib, is continued downward. If the kidney is found, it may be felt to slide into place. When once felt it will always be remembered. The clinical history will often assist in the diagnosis, but we will often find an absence of definite symptoms here, while in organic diseases of the liver, spleen, or kidneys, we have what may be called definite, or positive, or objective symptoms. The writer has had difficulty in deciding between tumors of the gall-bladder, and misplaced and subsequently abnormally fixed kidney. Two cases present themselves to memory in which fixation occurred after the displacement downward of the right kidney. In one of these cases, now under observation, there is reason to suspect perinephritic inflammation, and tuberculosis is feared. A case will be reported hereafter in which the displaced kidney was greatly enlarged, its lower border reaching the iliac crest, due to temporary closure of the ureter. Finally in this, as in other diseases, mistakes have been made by competent observers. For instance, Mr. Tait once operated for gall-stone and found nothing abnormal. Dr. Baker of Auburn, N. Y., afterward cured the patient by a nephrorrhaphy. Mr. Tait declared the kidney was in its normal position.

Treatment.—Cases of movable kidney occurring in fairly healthy women (the displacement found by accident), may well go without surgical treatment, or be treated by a suitable bandage. I have but little personal experience with use of the

[1] Enteroptosis is in some cases responsible for descent of the kidney or kidneys with the intestines.

bandage in nephroptosis. The bandage is worn for a time, and then laid aside, or if it fails of its purpose, the patient may return for other treatment. It may be impossible, in fact it generally is impossible, to support a kidney by means of a bandage when it descends far below its normal position. However this may be, the writer would suggest a possibility of as much harm by pressure upon the intestine, as good or comfort from the bandage and necessary pad. On the other hand, if the patient is compelled to seek medical advice, having symptoms not otherwise clearly and satisfactorily explained, if she is emaciated and has one or both kidneys descending far below their usual position, it is possible that surgery may, and often does give as pronounced relief, and as much satisfaction to both patient and surgeon, as any other operation upon the abdominal organs (large tumors excepted). The writer desires to be clearly understood. We do not wish the operation to become as universal as trachelorrhaphy, or even as oöphorectomy, which required a vast, accumulated experience to stay the hands of men who did these operations upon the slightest pretext. Nephrorrhaphy—or nephropexy—in good hands, I believe to be a safe operation. It is, at least, comparatively so. While the very safety and convenience of this operation may make it possible that it be abused, we must not hesitate to make use of it in appropriate cases.

The writer has observed a large number of these cases during the past few years. Every observer who makes as careful examination of the abdominal as he does of the pelvic organs, will frequently find movable kidneys. That such careful examination is not *the rule*, we have every reason to believe. That clinicians invariably make careful search for disease or displacement of every organ is doubtful. That they often fail to detect a common misplacement of the uterus or kidney is absolutely certain. The condition under discussion is a case in point, for only a few years past can we say we knew much, or thought much, about "movable kidney." The failure to discover the condition lies in the hurried examination of patients, especially those in the dispensary. A patient must be undressed. She must have a flaccid abdomen and perfect quiet of mind and body if we would discover a movable kidney. The patient should be turned upon her side, or placed in the Trendelenburg, or the reverse position in some instances. Perhaps after repeated careful search by the physician, the patient may find the organ herself. In a case recently operated upon, the writer had trouble in finding the kidney when the patient was ready for operation. It had gone far up under the liver, and the patient had to be raised to the sitting position before it would come out of its hiding place. In this case the kidney moved from the diaphragm to the brim of the pelvis. Most important information is gained by operations which expose the kidney to view or the touch. In two of my cases, large distended kidneys became prolapsed and adherent. As already mentioned, one of these cases had a stone blocking the ureter. The enormous kidney filled the space between the rib and crest of the ilium. When the stone would shift from its position, a free discharge of urine would reduce the size greatly and give prompt relief. The kidney would then return nearly to its normal position. This patient waived operation until quite recently; she was subjected to nephrolithotomy in another city with fatal result. I have at present under observation a lady who had two large prolapsed kidneys. The left kidney was as large as a child's head, and far below its normal site. The enlargement was undoubtedly due to tortion or bending of the ureter. Nephrorrhaphy has cured this kidney. It was taken out of the fatty capsule, brought out of the wound, and carefully examined by sight and touch. Its vessels and pelvis, with a portion of the ureter, were palpated; then it was sutured to the wound, with entire relief of all symptoms, so far as that kidney is concerned. The right kidney will at an early day be likewise subjected to operation. In the half dozen or more cases operated upon by the writer, he has selected those cases actually in need of relief of symptoms. The patients were rewarded in every instance by the most pronounced relief. Never have more striking benefits been experienced from any operation than from nephrorrhaphy. The glow of health appears to return before the patient leaves her bed. In one case the patient gained nearly forty pounds in weight. Another patient was promptly relieved of vomiting and gastric distress, and gains in health and appearance. One patient, with two movable kidneys, sent me by Dr. Tompkins of Fredericksburg, Va., had one of them anchored with so much benefit that she writes to have the other kidney fixed. The only case thus far in which I have failed to have a perfect result, was sent be by Dr. Moran. She recovered nicely from the operation, gained immensely in weight, but had a recurrence, at least so reported. I am convinced that a perfected technic will secure better results hereafter.

Finally, and in conclusion, we recommend exploration, palpation, and inspection of certain

kidneys which have descended in the abdomen, because of added weight from distension, and when there is pus in the urine with a diagnosis of pyelitis.

Case I.—Mrs. H., referred by Dr. Tompkins of Virginia.

Both kidneys movable, the right less than the left. Patient has pain in region of kidney; nausea, neurasthenia, neuralgia; she has chronic salpingitis, adhesions, etc. Operation May 27, 1895. The loin was opened, the kidney brought into the wound and secured by one large silk suture, including muscle, fascia, fibrous capsule, and about ⅜ inch of substance of the kidney. The fibrous capsule was opened up ½ inch wide and 2½ inches long on the peripheral margin of the kidney. The edges of the capsule were sewed to the muscular walls of the wound, the usual gauze packing applied, the wound closed by silkworm-gut sutures. Although the patient vomited almost unceasingly for five days, the kidney was firmly fixed when she recovered, and has given her no trouble since. Dr. Tompkins writes April 27th, that "she is doing remarkably well since you fixed her movable kidney. She has gained twenty-five pounds in weight and looks ten years younger."

Case II.—Mrs. L., referred by Dr. J. E. Moran.

Had left nephroptosis. Right kidney anchored by another surgeon. I had previously operated upon this kidney through the abdomen. She has nervous and gastric symptoms. Operation June 27, 1895, at Columbia Hospital. The kidney fixed in the loin in a similar manner to that practised in the previous operation. Result, rapid convalescence and relief of symptoms. She gained about forty pounds in weight.

Case III.—Mrs. A., referred by Dr. Richardson, Hyattsville, Md. Operation at Columbia Hospital.

Double nephroptosis. Kidneys fixed, painful, and greatly enlarged; the center of the tumors on a line midway between umbilicus and spine of ilium. This patient had hematuria, and operation was done on left kidney as a tentative measure of relief. Operation December, 1895. The kidney was found very adherent to its capsule. It was brought out of the wound and found to be of normal size. It was evident that the enlargement was due to tortion or bending of the ureter. She has had a perfect result; no further pain, no hematuria, no symptoms of disease on that side. Drs. Busey and Bowen of this city, have since carefully examined this lady. They unhesitatingly pronounce the operation a success, and advise similar treatment of the right kidney. The patient is willing for the second operation when it is my pleasure to perform it. Three deep silk sutures were used in this case to secure the kidney to the wound.

Case IV.—Mrs. M., referred by Dr. Simpson, Manassas, Va.

Right nephroptosis. Gastric symptoms, neurasthenia. Tumor felt by patient, which greatly worried her. Kidney to pelvic brim, very movable. Operation at Columbia Hospital, March 4, 1896. Three deep silk sutures. Capsule sutured as before. Perfect result.

Case V.—Mrs. L., referred by Dr. Sohon.

Right nephroptosis. Symptoms referable to stomach and nervous systems. Patient has petit mal. Operation January 20, 1896, at the residence of patient. Recovery uneventful and symptoms relieved. Two deep transverse, and two loop longitudinal sutures, the latter so placed as not to close the wound over the denuded surface. Iodiform gauze is placed between the wound surfaces down to the denuded surface of the kidney for four to six days, when it is withdrawn and the wound allowed to close.

Case VI.—Mrs. G., referred by Dr. Walsh.

Has right nephroptosis; neurasthenia, nausea, vomiting, gastric distress. Operation advised by Drs. Walsh and S. C. Busey. Operation at private hospital April 23, 1896. Recovering from operation. Technic of operation same as one previous.

The six cases here reported comprise all operations with one exception. Case II had been operated in Chicago for right nephroptosis. I opened the abdomen to make a positive diagnosis and anchor the kidney. It was my first operation. The result was a return of the prolapse which the patient promptly recognized. She consented to the operation through the loin as noted above. She is reported to have experienced symptoms indicating a return, but it is not confirmed as yet. Of the three cases where the left kidney was movable, the right had been or was still movable. Of the operations on the right kidney, the patients had very slight or no displacement of the left organ.

FRACTURES OF BONES ENTERING INTO THE FORMATION OF THE ELBOW-JOINT.[1]

By BENJAMIN BRABSON CATES, M.D.,
of Knoxville, Tenn.;
Professor of Anatomy and Clinical Surgery in the Tennessee Medical College at Knoxville, Tenn.

Fractures of the bones entering into the formation of the elbow-joint may be confined to anyone of the bones that go to form this articulation, or it may involve all of them simultaneously. Thus, it may be limited to the lower extremity of the humerus, involving the external or internal epicondyle. Though Agnew says there are no well authenticated cases of fracture of the external epicondyle, Grainger, in 1818,

[1] Read before the Tennessee State Medical Society at Chattanooga, Tenn., April 14, 1896.

described a case of fracture in this locality. Should a single fracture occur on either side of the lower extremity of the humerus, extending from just above the condylar projection obliquely downward into the joint and displacing more or less of the articular surface of the bone with the condyle, there is presented what Holmes describes as a fracture of the outer or inner condyle of the humerus. According to Malgaigne, fracture of the outer condyle is the more common. He is substantiated by Hamilton and Agnew. On the other hand, Desault, who first described it, says fracture of the inner condyle of the humerus is the more common. He is corroborated by Sir Charles Bell, Sir Astley Cooper, South, and Holmes. Again, there may be a fracture through the base of the condyle known as supra-condyloid, or it may be limited to a splitting of the condyles, forming an inter-condyloid fracture; sometimes supra-condyloid is complicated with a fracture between the condyles, constituting what Ashhurst calls a T fracture.

On the other hand, the injury may be limited to one or both bones of the forearm. If the upper extremity of the radius is the seat of injury, the fracture may be limited to the head of the bone, chipping off a portion of its circumference or splitting it through the middle. Injuries of the head of the radius are likely to be associated with injuries to some of the other bones forming the elbow-joint. Holmes says, should it occur before puberty it is more apt to be a separation of the epiphysis. Again, fracture of the upper extremity of the radius is sometimes limited to the neck of the bone. That this fracture is rare, should be inferred by the differences of opinion among celebrated authors. Malgaigne thinks it uncommon; Mr. South says it is common; Sir Astley Cooper denied the existence of such a fracture; Hamilton is not convinced that it occurs, and Agnew says, "There are not more than one or two cases of such a fracture—verified by *post-mortem* examination—in existence." One of them is in the Mütter collection, belonging to the College of Physicians of Philadelphia. The writer has met with one case of fracture of the neck of the radius occurring in a woman, and reported in a paper read before the East Tennessee Medical Society at Knoxville, Tenn., May 24, 1894, which paper subsequently appeared in the *University Medical Magazine* for January, 1895. Agnew's table[1] shows "that of 648 cases of fracture of the radius treated at the Pennsylvania Hospital in Philadelphia, 24 were in the upper third, 53 in the middle third, and 571 in the lower third. In 542 instances the side was mentioned; 278 were on the right side, and 264 were on the left side. And in 777 recorded cases of the same injury, 477 were in males and 300 in females. Of this number, 733 were single; 21 compound; 10 compound comminuted; 6 single comminuted, and 7 not determined.

Fracture of the coronoid process of the ulna is, according to the "American Text-book of Surgery," almost unknown, except as a complication of dislocation of the elbow backward. This coincides with the observation of Holmes, who further states that it may occur without this complication. Holmes met with but three or four specimens, and recorded *post-mortem* examinations: one in the museum of Guy's Hospital, another in a man killed by a fall at St. George's Hospital, in whom both coronoid processes were fractured, and the two bones of the forearm dislocated backward on both sides, and the heads of the radii were split longitudinally. Hamilton collected twelve cases of fracture of the coronoid process. Of these, Sir Astley Cooper found one in the dissecting-room of St. Thomas' Hospital. Sam Cooper described one in the University College Museum. Velpeau reported one. The late Chas. Bell Gibson one. Lotzbeck of Munich, reported five, and Leo, three. Agnew is very doubtful if this injury ever occurs, having never met with it in his half century of practice. His tables show that of 133 fractures of the ulna admitted into the Pennsylvania Hospital, only three or four are noted as fractures of the coronoid process.

The writer has met with one case of fracture of the ulna, in the private dissecting-room of the Tennessee Medical College, without dislocation of any of the bones of the elbow or rupture of its ligaments. It was, however, complicated with a partial fracture of the external condyle of the humerus and splitting of the outer third of the circumference of the head of the radius, which can be seen in the accompanying plate. The subject, in which this accident occurred, had a fall from a bridge and sustained other injuries from which he died. In addition to the fracture of the bones of the elbow, he had fractures of the scaphoid, semilunar, os magnum of the carpus of the right hand, and also of the right ischium.

The causes leading to fractures of the bones entering into the formation of the elbow-joint may be direct or indirect violence, or to muscular action, as when applied to either epicondyle or olecranon process. When more than one bone

[1] Agnew, vol. i, p. 897.

is fractured, the cause is due to crushing forces applied from without, or perhaps furnished by the body of the individual—as falling from some high point and striking a hard object with the elbow, the weight of the body crushing the bones beneath.

The diagnosis of fracture of any of the bones at the elbow, theoretically, is comparatively simple, yet practically offers certain difficulties, due in a measure to the anatomical structures surrounding it, and again, to the distance from

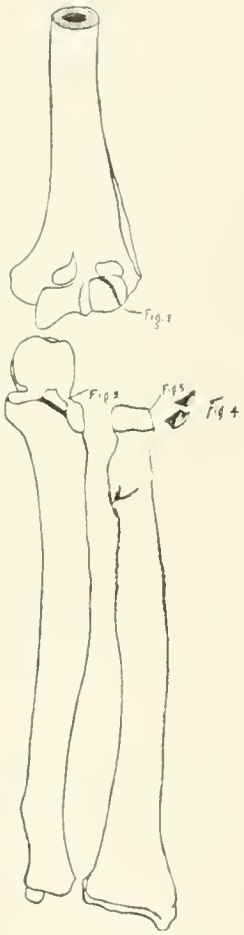

Illustration showing fractures of the bones of the left elbow-joint as found in a cadaver at the Tennessee Medical College. There was no luxation of the bones, or rupture of any of the ligaments. Fig. 1: Shows line of fracture through the radial head of humerus. Fig. 2: Fracture of coronoid process of ulna. Fig. 3: Fracture of outer third of circumference of head of radius. Fig. 4: Fragments of head of radius.

the surface of some parts of the bones entering into the formation of this joint—as in the coronoid process of the ulna and in the case of the radius —its neck. The diagnosis of injuries in this situation when of the condyles of the humerus, and not complicated by luxation of the bones of the forearm, if seen before there is much swelling, can be differentiated by grasping the condyles between the fingers and rubbing them to and fro. The condyles may be somewhat wider on the injured side than on the sound side. Should the fracture extend through the base of the condyles, there is in addition to the crepitus and preternatural mobility, shortening. When the olecranon process is fractured, there is gaping between the fractured process and shaft of the bone. There is not always the complete loss of power of extending the forearm as the books describe. Should the coronoid process of the ulna sustain a fracture, authors do not give any positive opinion as to the diagnosis, except at necropsy, though it might be felt in thin subjects and on firm pressure as a loose body in front of the joint. On the other hand, if the upper extremity of the radius is fractured, the close proximity of its head to the surface, offers the surgeon a better opportunity for manipulation; since by pressing upon the head of the radius with the thumb of one hand and grasping the hand of the patient with his other, he can, by pronation and supination, tell with a fair degree of certainty, provided the other symptoms of fracture be present, whether the head or the neck of the bone is the seat of injury.

The treatment of the fractures of the different bones entering into the formation of the elbow-joint will have to be met according to the exigencies of the individual case. If simple, and seen before there is much tumefaction, and involving the lower extremity of the humerus, the application of the roller bandage and an internal rectangular splint may be applied; or an anterior angular splint, well padded with a cap for the posterior surface of the elbow, is good. If the olecranon is fractured, the object is to keep the fragment in contact with the shaft of the ulna, which can be done by means of compresses with adhesive strips, fortified by figure-of-eight turns of the roller bandage, and by keeping the arm extended by means of a straight splint applied to the anterior surface of the arm and forearm. In case of simple fracture of the upper extremity of the radius, it is not always possible to treat the injury with internal angular splint, as recommended by Ashhurst. Then the surgeon is justified in using the plaster-of-Paris, keeping the forearm midway between pronation and supination. When there is a single fracture of the coronoid process of ulna, the application of a compress and binding the forearm to an anterior rectangular splint, is spoken of by authors. Should the trauma be of such a nature as to permanently injure the structures of the joint, as often happens in com-

pound fractures forming a liability to anchylosis, the arm should be placed in a position the most useful, which is nearly a right angle. In order to overcome the tendency to anchylosis, which so often obtains in fractures to any of the bones at the elbow-joint, it is well that the surgeon commence passive motion before the adhesions have undergone organization. Some surgeons recommend it as early as twelve days, while others say to wait two or three weeks.

A RESUME OF TEN MONTHS' OF VAGINAL WORK.[1]

BY EDWIN B. CRAGIN, M.D.,
OF NEW YORK.

THE principle that beaten paths are easier to follow than untried ways applies as well in surgery as in other walks of life. The abdominal route had become the one so often taken in attacking disease of the pelvic organs that the mere suggestion of using the vaginal route for this purpose seemed not only unnatural, but unwise.

Why leave methods which, in the hands of all of us, had not only proven themselves valuable, but seemed well-nigh perfect, for new methods, which all admit are as yet more difficult for the operator, and the technic of which still needs to be perfected? Would we not meet with hemorrhage, which we would be unable to control with any certainty? Would we not encounter other almost unsurmountable difficulties? These and many other misgivings haunted me when, on March 2, 1895, encouraged by the reports of other vaginal operators, I decided to convince myself of the value or defects of the vaginal route for removing diseased conditions of the pelvic organs.

Four features of the vaginal work impressed themselves upon me as having, in theory at least, advantages over the abdominal, and induced me to try the method:

1. Pus from ruptured pus-tubes and ovarian abscesses would flow downhill and away from the intestines, thus lessening the chances of sepsis.

2. The abdominal incision, with its tendency to hernia and unsightly scar, would be avoided.

3. Handling of the intestines would be lessened, and consequently intestinal adhesions would be few.

4. As another result of lessened handling of the intestines, shock would be diminished.

The object of this paper is to review carefully the writer's vaginal work of the past ten months, and ascertain whether the above anticipated advantages have been borne out in practice.

Whenever it has been possible to leave in the pelvis a comparatively healthy tube and ovary, or an ovary and a healthy portion of a tube, or even a health portion of an ovary, this procedure has been adopted, so that in a large proportion of the cases the uterus and one appendage, wholly or in part, have been left. During this period, from March 1, 1895, to January 1, 1896, my vaginal and abdominal sections have been equal in number, viz., fifty-five vaginal and fifty-five abdominal. In the fifty-five vaginal sections, both appendages were removed in only thirteen cases; and in three of these cases, in spite of the fact that both appendages were diseased and were removed, the uterus appeared to be so healthy that, after curettage and drainage, it was left in the pelvis. In cases where both appendages were removed, and the uterus showed marked endometritis, or the salpingitis involved the interstitial portion of the tube, the uterus was removed also. This was done in ten of the fifty-five cases. In reviewing his work, the conscientious surgeon is lead to ask himself whether he would do the same, were he to operate on the case again; in other words, has he any regrets? Of these fifty-five cases, which include all the vaginal sections, for all indications, done by the writer during the ten months above-mentioned, four have died.

One, Case XIV of the series was for *carcinoma uteri*, in which the disease had extended beyond the uterus—a case in which the radical operation should not have been attempted.

The second, Case XII, was one of puerperal septicemia, in which the uterus was removed, in the vain hope of getting beyond the septic process.

The third, Case XXII, was that of a large pelvic abscess in a patient very weak and septic, in whom one pocket of pus was opened and drained through the vagina, July 19th. Temperature and pulse came down, and patient improved, but on July 23d temperature and pulse rose again, and on July 26th patient was etherized, with a view of finding and opening, through the vagina, another pus-cavity. During the bimanual examination, and before any instruments were used, a large collection of pus escaped into the rectum. The patient was at once put to bed in fair condition, but died the next morning.

The fourth death can be justly assigned to the vaginal section, and seems to me the only one of the four which comes in competition with the abdominal operation. This was Case VII, in my list of vaginal sections. Mrs. L., suffering with double pyosalpinx, was operated on by me April 23, 1895. Both pus-tubes were removed, also the right ovary. The left ovary seemed healthy, and

[1] Candidate's paper presented for admission to the Am. Gynec. Soc., May, 1896.

was not removed; neither was the uterus. The patient died of sepsis, April 29th.

I have thought much over this case, and have wondered if the result would have been the same had the operation been performed from above. The pus-sacs ruptured in removal, and some pus escaped. The same thing would undoubtedly have occurred in the suprapubic operation. The pelvis was drained, and undoubtedly much better drained than it would have been from above. The case died, but, in the judgment of the writer, the same operation, if performed from above, would have brought the same result. Had the uterus been removed *per vaginam* at the same time with the tubes, the result would probably have been different.

Something should be said regarding the complications of vaginal section. Rectal fistulæ are rather more common after the vaginal operation than after the abdominal. One reason for this is, perhaps, the fact that our touch has not been as well educated in the feel of the pelvic organs from below as from above.

The technic of opening the peritoneum, without injuring the intestine, has not been as long practised or as well perfected below as above. Experience and practice will improve this. The spontaneous results, however, of fecal fistulæ occurring in the vaginal operation are much superior to those in the abdominal.

It has been my misfortune to have had five fecal fistulas. In three, however, there was a previous communication of an abscess with the rectum. The only one which did not close spontaneously was in Case XL, who had an abscess previously communicating with the rectum, and in whom the operation was begun *per vaginam* and finished from above; the uterus not being removed. This fistula had to be closed by operation three months later.

In the other four cases, the fistulas closed spontaneously; the first in sixteen days; the second in seven; the third in fifteen; the fourth in twenty-four, an average of fifteen and a half days. Rectal fistulas seem to close more readily when the uterus is removed than when it is left; also in those cases where the opening in the rectum is farther from the vagina, so that a longer granulating and contracting canal results, close, in the experience of the writer, more readily than those nearer the vagina.

One of the early objections raised to the vaginal method, is that the vagina does not furnish sufficient room for the work. Of course, additional room may easily be obtained by incising the perineum on either side, but that one soon becomes accustomed to the space furnished by the retracted vagina, is shown by the fact, that in only three of the fifty-five cases, was it found necessary to enlarge the space by incision.

The popular method at the present time for controlling hemorrhage and the pedicles, seems to be by the use of clamps, left on about forty-eight hours. Save in exceptional cases this does not appeal to me as the best method. Certainly, the patient is more comfortable when ligatures are used instead of clamps, and the sloughing is less. My own rule is to make use of clamps temporarily if at any stage in the operation they seem more convenient, but to use ligatures chiefly, and with certain rare exceptions, where the uterus is large and fixed, and the broad ligaments are markedly infiltrated, replace the clamps by ligatures before removing the patient from the table. If clamps are necessary, use as few as possible. In only four of the fifty-five cases have I left on clamps. Catgut has been my only ligature material. The cases which seem to me best fitted for the use of clamps are the puerperal cases.

The only vesical fistula which has occurred in the above series was in Case XXV, where, in an extensive epithelioma of the cervix, involving in one place the vesico-vaginal septum, a portion of the bladder was intentionally removed in order to get beyond the disease. This fistula was closed by operation some months later.

Of these 110 cases operated on by me during the last ten months of 1895, nearly all the pus cases were done *per vaginam*; in fact only four were operated on through the abdomen.

Comparison of the fifty-five vaginal with the fifty-five abdominal operations, done during the same time, although, at first thought, furnishing a rational criterion of the two operations, on further consideration does not seem the wisest plan, as the cases were so dissimilar, the vaginal operations being mostly suppurative cases, the abdominal mostly non-suppurative. The plan selected for comparison has been to table twelve cases of inflammatory disease of the appendages, selected in order of date of operation *per vaginam*, and compare them with twelve cases as nearly like them as possible, operated on through the abdomen during the year previous. These cases were taken in the order of date of operation, and the only guiding principle in their selection was to have them as similar to the vaginal cases as possible. They were diseased appendages with adhesions, chiefly pus-tubes.

It has been argued by the opponents of vaginal work that it requires a much longer time than the abdominal operation. These twenty-four cases taken for comparison were operated upon at the Roosevelt Hospital, where the time of each operation is noted. The average time in the twelve abdominal cases was 46 minutes and 5 seconds. The average time in the twelve vaginal cases was 40 minutes and 25 seconds; a gain over the abdominal route of 5 minutes and 40 seconds.

Let us now consider the four supposed advantages of the vaginal route, which were presented at the beginning of this paper, and see if experience has shown them real or fancied.

1. *Sepsis.*—Pus-sacs which have ruptured in removal have certainly discharged their leakage downward, and with less soiling of the intestines than would have been possible in the abdominal operation. Moreover, as we shall soon show from the temperature, pulse, and progress of the case after operation, there has been less sepsis.

In the twelve vaginal cases and twelve similar abdominal cases, which were taken for comparison, there were noted the highest pulse after operation, the number of days the pulse remained above 100°, the highest temperature after operation, and the number of days the temperature remained above 100°. The averages were taken and are as follows:

Vaginal cases: Highest pulse, 108½; pulse above 100, 1½ days; highest temperature, 100.8°; temperature above 100°, 2⅔ days.

Abdominal cases: Highest pulse, 114$\frac{5}{12}$; pulse above 100, 2⅙ days; highest temperature, 101.4°; temperature above 100°, 3$\frac{5}{6}$ days.

Difference in favor of vaginal route: In highest pulse, 5$\frac{1}{12}$; in pulse above 100, ⅔ day; in highest temperature, .6°; in temperature above 100°, 1⅙ day.

2. *Hernia.*— During the month of January, 1896, a large proportion of the fifty-five vaginal cases have been examined, and in none of them did I find a hernia, although they were examined with that in view.

3. *Intestinal adhesions.* — The two symptoms which would seem to indicate intestinal adhesions are abdominal pain and difficulty in moving the bowels. In my experience both of these have been less in the vaginal than in the abdominal operation.

4. *Shock.*—Perhaps the best way to reach a conclusion regarding the relative shock in the two methods of operation, is to compare the highest pulse-rate in the first twenty-four hours in the two series of twelve similar cases.

In the vaginal cases, the average highest pulse in the first twenty-four hours was 102¾; in the abdominal cases, 110. A difference of 7¼ in favor of the vaginal route.

Let me say, in conclusion, that in my vaginal work, I have found hemorrhage under control, and obstacles easily surmountable.

SPONGE GRAFTING IN THE ORBIT FOR SUPPORT OF ARTIFICIAL EYE.[1]

BY E. OLIVER BELT, M.D.,
OF WASHINGTON, D. C.

To a skilled oculist, the ordinary enucleation of an eyeball is one of the simplest operations he is called upon to perform, and yet there are some cases in which so much of the conjunctiva is destroyed by careless or ignorant operators, that it is impossible for an artificial eye to be worn afterward. This is very annoying to a patient, and we cannot blame him if he never forgives the doctor who has so afflicted him. Such cases emphasize the fact that it is the duty of the surgeon not only to operate skilfully for the immediate relief desired, but he should do everything in his power to prevent disfigurement, and when an organ or limb cannot be restored to usefulness, he should at least obtain the best cosmetic results possible. After an eyeball has been removed, and an artificial eye inserted, very frequently it is not as prominent as the good eye. It has a *sunken appearance*, which attracts attention at once to the fact that the eye is artificial. To remedy this defect has been a problem for ophthalmologists for years.

One of the most satisfactory operations heretofore practised is that known as Mule's operation, which consists in the evisceration of the contents of the eye, and the insertion of a hollow glass globe in the sclerotic, which is sewed in. This proved fairly satisfactory, but there is some danger of the globe being broken, and occasionally the stitches come out and the globe escapes. There is also the risk of sympathetic ophthalmia where the entire eyeball is not removed. To obviate these difficulties and at the same time secure a full orbit, I have devised a method of sponge grafting which seems to meet the requirements without the disadvantages of other methods.

The operation is a simple one, and is performed as follows: The eyeball is removed by the ordinary method under strict asepsis. After all hemorrhage is arrested, the socket is washed out with

[1] Read before the Medical Society of the District of Columbia, June 3, 1896.

formalin solution, 1–1000, followed by sterilized salt solution. A globe of fine, soft, sponge about three-fourths the size of the eyeball (previously sterilized in five per cent. formalin solution and rinsed in the salt solution), is then inserted into the socket, or capsule of tenon. The conjunctiva is brought together and sewed with rat-tail sutures. The eyelids are then closed with compress and bandage. In a few weeks the sponge is filled with new tissue, which in time becomes firm, solid flesh, making a full orbit and a fine support for the artificial eye. The sponge fibers are apparently absorbed.

I have performed this operation in five cases with fairly good results in all, but union of the conjunctiva has not been firm enough to prevent some of the stitches from breaking or cutting out and the wound gaping. In future cases, to relieve this strain on the conjunctiva and to obtain good motion of the eye, I think of uniting the opposing recti muscles with rat-tail sutures, and then the conjunctiva over that by the purse-string or subcutaneous suture. By this method we should get union by first intention, good motion of the stump, and a full orbit. There seems to be no danger from infection of the sponge, for in two cases the eye was removed for panophthalmitis. Not only has this operation advantages over other methods in recent cases, but in old cases in which the eye was removed months or years ago, when there is this sunken appearance of the artificial eye, the socket might be reopened and a sponge inserted.

Since making my investigations, I find that Professor D. J. Hamilton of Edinburgh, practised sponge grafting for old ulcers in 1880, since which time a few other physicians have tried it in fresh wounds, and some other similar conditions that skin-grafting had been used in. However, I cannot find in all the medical literature in the library of the surgeon-general's office any mention of sponge being used as I have suggested and tried.

SURGEON LIEUTENANT-COLONEL LAWRIE thus describes in the *Lancet* the use of mercuric chlorid in treatment of hydrocele: "The sac is punctured in the usual way, and when about one-third or one-half of the fluid has been withdrawn, two drams of a saturated solution of bichlorid of mercury in glycerin are injected and mixed with that which remains, and allowed to rest in the sac for from half a minute to a minute. The whole of the fluid is then drawn off to the last drop. Very little pain is experienced, and, unless the patient is nervous or takes chloroform, he is able to move about immediately after the operation."

CLINICAL MEMORANDA.

THE COMPARATIVE VALUES OF HOMATROPIN AND ATROPIN AS MYDRIATICS.

BY FLORENCE MAYO, M.D.,
OF PHILADELPHIA, PA.;
INSTRUCTOR IN DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

ALTHOUGH the action of homatropin hydrobromate upon the eye has been carefully studied since 1881,[1] its reliability as a mydriatic is doubted by many ophthalmologists. In order to test the relative values of homatropin and atropin, I refracted the following cases, at the suggestion of Drs. Jackson and de Schweinitz, in their clinics at the Philadelphia Polyclinic.

Homatropin was first used, and while the eyes were yet under the influence of this drug, atropin was instilled thus producing a continuous mydriasis and allowing the atropin to act upon a ciliary muscle which was already paralyzed as much as homatropin was capable of producing this condition.

The use of the homatropin was not trusted to the patient, but the instillations were made by myself at the clinic. The strength of the solution used was gr. 1 to 40 minims of water. Six drops of this were used at intervals of five minutes, one hour before the test was made. The condition of the refraction was then measured by skiascopy and subjectively at the test case; and the same procedures were employed to ascertain whether any accommodation was present. The cases were selected only to the extent of excluding those patients who were not sufficiently intelligent to respond to the subjective tests. The ages of the patients ranged from eleven to thirty-nine years.

As soon as the refraction under homatropin was completed, the patient was given a solution of sulphate of atropin, gr. ss. to fl. ʒ j, with directions to use one drop in each eye three times daily, and to return to the clinic after a two days' use of the drops. The second refraction was then done.

The homatropin and the atropin used were from Merck's laboratory.

Conclusions: The table shows that the atropin confirmed the measurement made under homatropin; that it failed to reveal any error of refraction which the homatropin had not already uncovered, and that if homatropin be properly used it is a reliable mydriatic.

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[1] "The Value of Homatropin Hydrobromate in Ophthalmic Practice." S. D. Risley, M.D., *American Journal of the Medical Sciences*, January, 1881, p. 113.

"The Comparative Action of Hydrobromate of Homatropin and of Sulphate of Atropia upon the Iris and Ciliary Muscle." C. A. Oliver, M.D., *American Journal of the Medical Sciences*, July, 1881, p. 150.

"Comparative Investigations into the Effects of Atropin, Duboisin, and Homatropin." H. Schaeffer, M.D., *Archives of Ophthalmology*, November, 1881, p. 196.

"Homatropin Hydrobromate." Edward Jackson, M.D., MEDICAL NEWS, July, 1886, p. 88.

"A Contribution to the Physiological Action of Hydrobromate of Homatropin with a Summary of its Action on the Eye." Geo. E. de Schweinitz, M.D., and H. A. Hare, M.D., THE MEDICAL NEWS, December, 1887, p. 173.

No.	Age.	Refraction under Homatropin Hydrobromate.	Under Atropin Sulphate.
1	16	O. D. + 1.25 D. Sph. = 6 v	The same
		O. S. + 1.25 " " ⌒ + 0.37 D. cy. ax. 90° = 6 v	" "
2	23	O. D. + 1.25 " " ⌒ + 0.37 " " 90° = 6 vii	" "
		O. S. + 1.50 " " ⌒ + 0.50 " " 90° = 6 vii	" "
3	21	O. D. − 2.50 " " = 6 vi	" "
		O. S. + 2.50 " " = 6 vi	" "
4	35	O. D. + 1.50 " " = 6 vi	" "
		O. S. + 1.25 " " ⌒ + 0.25 " " 90° = 6 vi	" "
5	28	O. D. + 0.75 " " ⌒ + 0.50 " " 180° = 6 v	" "
		O. S. + 0.50 " " ⌒ + 0.75 " " 180° = 6 v	" "
6	19	O. D. + 0.75 " " = 6 vi	" "
		O. S. + 1. " " 6 vi	" "
7	18	O. D. + 1.50 " " ⌒ + 0.75 " " 90° = 6 vi	" "
		O. S. + 1.25 " " ⌒ + 1.25 " " 90° = 6 v	" "
8	17	O. D. + 1.50 " " ⌒ + 1.25 " " 60° = 6 viii	" "
		O. S. + 1.75 " " ⌒ + 4.50 " " 20° = 6 xv	" "
9	13	O. D. + 1.50 " " ⌒ + 1. " " 90° = 6 viii	" "
		O. S. + 7. = 6 xv	" "
10	24	O. D. + 1.75 " " = 6 viii	" "
		O. S. + 0.75 " " ⌒ + 3.50 " " 90° = 6 viii	" "
11	20	O. D. + 0.25 " " ⌒ + 0.37 " " 90° = 6 v	" "
		O. S. + 0.25 " " ⌒ + 0.50 " " 90° = 6 v	" "
12	23	O. D. + 1.25 " " ⌒ + 0.50 " " 90° = 6 vi	" "
		O. S. + 1.75 " " ⌒ + 0.50 " " 90° = 6 vi	" "
13	17	O. D. + 1. " " ⌒ + 0.25 " " 90° = 6 vi	" "
		O. S. − 1.25 " " ⌒ + 4. " " 120° = 6 viii	" "
14	15	O. D. + 0.25 " " ⌒ + 0.25 " " 90° = 6 vi	" "
		O. S. + 0.50 " " ⌒ + 0.25 " " 90° = 6 vi	" "
15	32	O. D. + 1.50 " " ⌒ + 1.25 " " 90° = 6 v	" "
		O. S. + 1.50 " " ⌒ + 0.75 " " 90° = 6 v	" "
16	18	O. D. + 4.75 " " = 6 v	" "
		O. S. + 4.50 " " = 6 v	" "
17	39	O. D. + 3.50 " " ⌒ + 0.25 " " 90° = 6 vi	" "
		O. S. + 4. " " = 6 xxi	" "
18	34	O. D. − 12. " " 6 xv	" "
		O. S. − 7. " " ⌒ − 2. " " 170° = 6 lx	" "
19	32	O. D. + 0.25 D. Sph. ⌒ + 0.50 D. cy. ax. 90° = 6 vi	The same
		O. S. + 0.25 " " ⌒ + 0.75 " " 90° = 6 v	" "
20	32	O. D. + 0.50 " " ⌒ + 0.75 " " 110° = 6 vi	" "
		O. S. + 0.75 " " ⌒ + 2.25 " " 70° = 6 vi	" "
21	21	O. D. − 0.50 " " ⌒ + 3.25 " " 90° = 6 vi	" "
		O. S. − 0.50 " " ⌒ + 3.50 " " 90° = 6 vi	" "
22	16	O. D. + 2.25 " " ⌒ + 0.25 " " 90° = 6 v	" "
		O. S. + 2. " " ⌒ + 0.25 " " 90° = 6 v	" "
23	14	O. D. + 1. " " ⌒ + 0.75 " " 90° = 6 vi	" "
		O. S. + 1.25 " " 6 vi	" "
24	16	O. D. + 0.75 " " ⌒ + 0.25 " " 90° = 6 vi	" "
		O. S. + 0.75 " " ⌒ + 0.25 " " 90° = 6 vi	" "
25	18	O. D. + 0.50 " " ⌒ + 0.62 " " 180° = 6 vi	" "
		O. S. + 0.50 " " ⌒ + 0.87 " " 180° = 6 vi	" "
26	19	O. D. + 0.25 " " 180° = 6 vi	" "
		O. S. + 0.25 " " = 6 vi	" "
27	16	O. D. + 2.75 " " ⌒ + 0.50 " " 90° = 6 vi	" "
		O. S. + 2.50 " " ⌒ + 0.37 " " 90° = 6 vi	" "
28	13	O. D. + 5.50 " " ⌒ + 0.50 " " 105° = 6 viii	" "
		O. S. + 5.50 " " ⌒ + 0.50 " " 75° = 6 viii	" "
29	19	O. D. + 1.25 " " ⌒ + 0.75 " " 90° = 6 vi	" "
		O. S. + 1.50 " " ⌒ + 0.75 " " 75° = 6 vi	" "
30	17	O. D. + 0.50 " " ⌒ + 0.25 " " 90° = 6 vi	" "
		O. S. + 0.50 " " ⌒ + 0.50 " " 90° = 6 vi	" "
31	17	O. D. + 1.50 " " ⌒ + 0.75 " " 90° = 6 vi	" "
		O. S. + 0.75 " " ⌒ + 0.50 " " 90° = 6 vi	" "
32	22	O. D. + 1. " " = 6 vi	" "
		O. S. + 0.75 " " ⌒ + 0.50 " " 105° = 6 vi	" "
33	23	O. D. + 0.25 " " = 6 vi	" "
		O. S. + 0.25 " " = 6 vi	" "
34	30	O. D. + 4.25 " " ⌒ + 0.50 " " 90° = 6 vi	" "
		O. S. + 4.75 " " ⌒ + 0.50 " " 90° = 6 vi	" "
35	18	O. D. + 1. " " ⌒ + 1.25 " " 90° = 6 iv	" "
		O. S. + 1.50 " " ⌒ + 0.25 " " 90° = 6 iv	" "
36	24	O. D. + 0.50 " " ⌒ + 1.25 " " 90° = 6 vii	" "
		O. S. + 1.75 " " 90° = 6 vii	" "

No.	Age.	Refraction under Homatropin Hydrobromate.						Under Atropin Sulphate.
37	15	O. D. +3.	D. Sph.	⊃ +0.75	D. cy. ax.	110°	= 6/vi	The same
		O. S. +2.75	" "	⊃ +0.75	" "	80°	= 6/vi	" "
38	19	O. D. +0.50	" "	⊃ +0.50	" "	90°	= 6/vi	" "
		O. S. +1.	" "	⊃ +0.75	" "	90°	= 6/vi	" "
39	13	O. D. +0.76	" "				= 6/vi	" "
		O. S. +1.	" "				= 6/vi	" "
40	19	O. D. +1.	" "				= 6/vi	" "
		O. S. +1.	" "				= 6/vi	" "
41	16	O. D. +1.	" "	⊃ +0.50	" "	90°	= 6/vi	" "
		O. S. +1.	" "	⊃ +0.50	" "	90°	= 6/vi	" "
42	14	O. D. +0.75	" "	⊃ +0.37	" "	90°	= 6/v	" "
		O. S. +0.50	" "	⊃ +0.25	" "	90°	= 6/v	" "
43	22	O. D. +2.	" "				= 6/vi	" "
		O. S. +2.	" "				= 6/vi	" "
44	11	O. D. +0.75	" "				= 6/iv	" "
		O. S. +0.75	" "				= 6/iv	" "
45	24	O. D. +1.25	" "	⊃ +0.25	" "	90°	= 6/vi	" "
		O. S. +1.	" "	⊃ +0.50	" "	90°	= 6/v	" "
46	23	O. D. +3.	" "	⊃ +1.50	" "	90°	= 6/vi	" "
		O. S. +2.75	" "	⊃ +1.25	"	110°	= 6/vi	" "
47	23	O. D. +2.50	D.Sph.	⊃ +0.75	D. cy. ax.	95°	= 6/vi	" "
		O. S. +2.50	" "	⊃ +0.25	" "	90°	= 6/vi	" "
48	27	O. D. +2.50	" "	⊃ +0.50	" "	80°	= 6/vi	" "
		O. S. +1.50	" "	⊃ +0.50	" "	105°	= 6/vi	" "
49	23	O. D. +1.75	" "	⊃ +0.25	" "	115°	= 6/vi	" "
		O. S. +1.75	" "	⊃ +0.25	" "	115°	= 6/vi	" "
50	22	O. D. +1.	" "				= 6/vi	" "
		O. S. +1.	" "				= 6/vi	" "
51	16	O. D. +2.25	" "	⊃ +0.37	" "	90°	= 6/iv	" "
		O. S. +2.75	" "	⊃ +0.50	" "	90°	= 6/iv	" "
52	21	O. D. -1.	" "	⊃ −2.50	" "	90°	= 6/xii	" "
		O. S. −1.75	" "	⊃ −0.50	" "	90°	= 6/xii	" "
53	25	O. D. +1.	" "	⊃ +0.50	" "	180°	= 6/iv	" "
		O. S. −0.50	" "	⊃ +2.25	" "	160°	= 6/vi	" "
54	18	O. D. +0.60	" "				= 6/iv	" "
		O. S. +0.90	" "				= 6/iv	" "
55	27	O. D. +0.25	" "			30°	= 6/vi	The same
		O. S. +0.25	" "			105°	= 6/vi	" "

REMARKS.—No. 2 refracted three months previously under duboisia with like result. No. 55 refracted under atropin three years previous to that under homatropin.

AN UNUSUAL VIBRATORY CICATRIX IN THE MEMBRANA TYMPANI.

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EDWARD B., aged thirty-eight, driver, was first seen at the Brooklyn Eye and Ear Hospital March 31, 1896, and examined at length the next day. He says that in childhood he had recurrent attacks of pain and discharge in both ears, which he attributes to bathing and diving; that, since then, he has had in both ears tinnitus and deafness, worse in the right ear until the last two years, during which the deafness has grown worse in the left ear. At present H. D. w. R. 3/60, L. 1/2/60; wh. and conv. R. ca. 24′, L. 18′. Tuning forks; from vertex, louder in the left ear; in the left ear, B. C. louder than A. C. for forks c and c″, for c‴ A. C. louder than B. C. The absolute duration of air conduction exceeds that of bone conduction for all three forks. In the right ear, A. C. louder and longer than B. C. all the way through the Hartmann series. Upper tone limit, as shown by the Galton whistle, 5.3 for right ear, 5.5 for left ear.

Right m. t.; malleus in normal position; the smaller, anterior half of m. t. present, and the seat of a medium-sized chalk deposit, and of a full-sized, but broken, light reflex, the larger, posterior half consists of a depressed, at one point, adherent, cicatrix. Left m. t.; great retraction, marked opacity, except of a small anterior inferior cicatrix: light reflex diffuse and dim. Both Eustachian tubes open freely to Politzerization.

The intranasal conditions are such, from moderately enlarged turbinateds on right side, and crest running along left side of septum, that under quiet conditions he can just succeed in breathing through the nose, but in case of any exertion, and probably to a considerable extent when sleeping, his breathing is largely oral.

The unusual part of the case is the behavior of the posterior cicatrix in the right membrane: Whenever the man speaks or swallows, but not with the pulse or respiration, there is very perceptible vibration of the upper half of this cicatrix. This vibration occurs with every sound of the voice, with the letters of the alphabet, as well as with words, the one thing noticeable in this connection being, what appears to me, the fact that there is a smaller vibration for the letters m, n, o, and r, than for the rest of the alphabet. The first part of the vibration is inward, followed by the rebound outward, and so on, indicating, it

seems to me, that the immediate effect of the phonation is in this case the formation of a partial vacuum in the tympanic cavity.

Is this phenomenon due to the physiological effect of phonation upon the air contained in the tympanum, or is it pathological? If it is pathological, and this seems to me the more probable explanation, then it is due to the existing, slightly obstructive, nasal condition, on the same principle that mouth-breathing is considered to tend always to the exhaustion of the air in the tympanum.

Viewed in this light it perhaps explains the symptoms about which I have recently been consulted by a gentleman, who, several days in the week, is obliged to do considerable public speaking. By evening of the days when he speaks most, he has an uncomfortable, stuffy feeling in the ears, from which feeling he is quite free on those days when he does no public speaking. This patient has also a very slightly obstructive nasal condition, not sufficient to cause mouth-breathing except after very considerable exertion. In both cases the treatment will consist of the re-establishment of free nasal respiration.

If any apology is necessary for bringing this case to the notice of the profession, I would offer a two-fold excuse, viz.: In the first place, while I, with probably many others, have seen cicatrices vibrate synchronously with the pulse, and with respiration, it was to me a novelty to see one affected by every sound of the voice; and in the second place, because it opens up a question, possibly physiological, but much more likely pathological, for our consideration, and may possibly be the means of explaining an occasional, otherwise obscure, case.

MEDICAL PROGRESS.

The Urology of Cataract.—As the result of an investigation covering a period of three years and involving 335 examinations in 259 cases of cataract of all kinds, except the traumatic variety, FRENKEL (*Lyon Médical*, 1896, No. 14, p. 466) found that the quantity of urine excreted in twenty-four hours by such patients under hospital regime in a state of either absolute or relative repose, presented a diminution greater than could be accounted for by the conditions of observation. The density of the urine approached in the mean that of persons with normal diuresis, thus indicating that the secretion of the urinary salts was diminished. It was further found that the elimination of urea was considerably diminished in most of the patients, and this diminution was due not only to the age of the patients, the alimentary regimen and the repose, but probably also in part to the diminution in the bodily metabolism. The elimination of the chlorids was found to be normal or exaggerated. The phosphates were diminished in some, normal in others, and increased in still others. Cases of cataract with phosphaturia were not very rare; they were less rare than cases with glycosuria, of which the proportion was 1.16 per cent. Neither the diabetes nor the cataract presented any special gravity, nor did special difficulty attend surgical intervention with antiseptic precautions. So-called physiologic albuminuria was found to be as common in cases of cataract as in any other group of individuals. Pathologic albuminuria was observed in a proportion of only 0.6 per cent. Peptonuria may be observed in cases of cataract, particularly in persons not kept in bed, but this condition bears no special relation to cataract.

A Fatal Case of Petroleum Poisoning in a Girl of Two Years.—JOHANNESSEN (*Berliner klinische Wochenschrift*, 1896, No. 15, p. 317) has reported the case of a girl, two years old, who, when seen several hours after swallowing an uncertain amount of ordinary coal oil, presented general pallor, with cyanosis of the lips, and difficulty of breathing. Consciousness was not lost, though blunted. The pupils were not dilated and reacted to light. The lips and tongue presented no peculiarity, while the tonsils appeared to be slightly swollen. The pulse was rapid and irregular, though the heart-sounds were distinct. Respiration was accelerated. The temperature was normal. Signs of rachitis were present. Introduction of the finger into the pharynx induced free vomiting; the vomitus contained, in addition to a little blood, a good deal of mucus, and smelled strongly of coal oil. The stomach was washed out through the tube and a half hour later vomiting was again induced. The pulse improved upon the subcutaneous injection of fifteen minims of camphorated oil, and the child appeared to improve. The bowels were evacuated by enema, the discharge emitting an odor of coal oil. Later, however, the child again became drowsy, the respiratory difficulty returned, the pulse became weaker and more irregular, and finally death ensued. Upon *post-mortem* examination, about an ounce of clear yellow fluid, smelling feebly of coal oil, was found in each pleural cavity; the serous membrane itself was smooth and free from ecchymoses. The lungs were somewhat edematous, the expressed fluid possessing a slight odor of coal oil. They were heavy and dark in color. The lower lobes and the adjacent parts of the upper lobes failed to crepitate, and portions sank in water. The glands at the root of the lung and surrounding the trachea, as well as some of the glands of the neck, were swollen but not cheesy. The cavities of the heart contained clotted blood, some of which extended into the large vessels. Peyer's patches and the solitary follicles were somewhat injected and swollen. The mesenteric glands were found to be enlarged and hyperplastic. The veins of the cerebral membranes were somewhat hyperemic. Otherwise no noteworthy changes could be detected.

The Treatment of Pneumonia with Guaiacol in Spray.—MALDARESCO (*Semaine Médicale*, 1896, No. 19, lxxiv) reports the results obtained in the treatment of more than one hundred cases of pneumonia by means of guaiacol employed as a spray upon the external surface. The use of the medicament is begun in antithermic doses as soon as the diagnosis is determined, the application being made to the posterior aspect of the thorax upon the affected side, and covered with a layer of absorbent cotton held in

place by a bandage. When the antipyretic effect has disappeared and the temperature has fallen to 38° C., (100.4° F.) the application is repeated at the end of three or four hours. This course is pursued until the temperature remains permanently at the normal. In mild cases, such a result is often obtained at the end of two days. When the apyrexia is established quinin is given in doses of four grains daily, in conjunction with alcohol. In the course of the treatment thus carried out, cough diminishes, expectoration becomes easy, and the sputum loses its viscosity and its rusty coloration. Favorable results were secured not only in cases of fibrinous pneumonia, but also in some of broncho-pneumonia. Care must be exercised in the treatment of the very young and the aged; in the former it is well to use a forty per cent. mixture of guaiacol with almond oil, and make the application successively upon the anterior, posterior, and lateral aspects of the chest.

The Application of Artificial Leukocytosis to the Treatment of Septic Puerperal Processes.—Hofbauer (*Centralblatt fur Gynäkologie*, 1896, No. 17, p. 441) details a series of observations in which nuclein was employed to induce artificial leukocytosis in the treatment of a number of puerperal women suffering with septic processes, The action of the therapeutic agent proved prompt, and free from unpleasant manifestations. The administration by the mouth was followed by the appearance of nucleinic acid in the chyme. The effects of the treatment manifested themselves by improvement in both the general and the local conditions.

The Employment of Anti-streptococcus Serum in the Treatment of Scarlatina.—Baginsky (*Berliner klinische Wochenschrift*, 1896, No. 16, p. 340) reports the results secured in forty-eight cases of scarlatina between October, 1895, and March, 1896, in the course of which the anti-streptococcus serum of Marmorek was employed. In twenty-seven the course of the disease was unusually favorable, the majority recovering without complication. Only four were attended with suppurative otitis; one with mild nephritis; in two others severe anginas developed; in one case acute and painful glandular enlargement followed the injection, but recovery ultimately ensued. A striking feature in all was the rapid reduction of the temperature. It was further remarkable that in only two cases did severe anginal symptoms appear in the course of treatment with the injections. Ten cases in which such symptoms were present on admission terminated in speedy recovery. In exceptional cases albuminuria appeared, and in a single case nephritis with tube-casts, blood-corpuscles, etc. In a second group of cases of severe type the results were not so happy, although it is possible that in these the amount of serum employed was insufficient. It appeared, however, as though the cases were refractory to the therapeusis. In a third group of cases, five in number, the serum was employed only for the relief of complications arising late in the progress of the disease. In four of these cases the results were satisfactory; in one, complicated by ulcerative endocarditis, death ensued. Among the whole number of cases there were seven deaths, 14.6 per cent., as compared with percentages fluctuating between 22.6 and 34.4 in the years from 1890 to 1895. The mortality among cases treated with other means during the same epidemic as that in which the serum was employed was 24.9 per cent. The secondary manifestations attending the injections were similar to those observed in the sequence of injections of diphtheria antitoxin.

The Function of the Suprarenal Bodies.—As the result of an experimental study Dubois (*Archives de Physiologie*, April, 1896, No. 2, p. 412) arrives at the conclusion that the principal function of the suprarenal bodies is the destruction of toxins present in the circulation, and especially of the waste products of muscular activity and perhaps also those resulting from nervous activity. The glands do not appear to secrete any particular substance destined to be thrown into the circulation for the purpose of destroying or modifying noxious products constantly produced as a result of cellular activity, or gaining entrance from without. The cellular protoplasm of the capsules appears to possess a peculiar diastasic property not of a toxic nature which seems to be capable of exercising a modifying influence upon certain organic poisons, bacterial or otherwise, an influence requiring for its manifestation a certain period of time, and which may be exerted gradually. In the normal state the medullary zone contains alkaloids of intensely toxic activity, whose effects appear to be exerted especially upon the striped and unstriped muscular fibers. These alkaloids represent excrementitious matters whose retention is followed by the development of constitutional manifestations. They vary widely under different conditions.

THERAPEUTIC NOTE.

The Treatment of Pruritus Vulvæ. — While admitting that pruritus vulvæ may be purely a nervous manifestation, Ruge (*Berliner klinische Wochenschrift*, 1896, No. 18, p. 391) states that with the exception of a small number of cases in which some constitutional disorder existed, the pruritus in his experience was the result of local irritation, of disease of the external genitalia of the vagina and the portio vaginalis. The irritant is assumed to be of chemic or bacterial nature. In accordance with these views, success in treatment will depend upon the application of antiseptic principles. Without removal of the hair of the mons veneris, the vulva, vagina, portio vaginalis, and the cervix within reach of the finger are carefully soaped, without the use of a brush, and the vulva and vagina washed with mercuric-chlorid solution until rendered thoroughly aseptic. Then the affected parts are rubbed with a vaselin ointment of the same, in strength from three to five per cent. These procedures must be repeated every three or four days. The results obtained with this plan of treatment have been entirely satisfactory. A similar course may be advantageously employed in the treatment of recent gonorrhea in the female.

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SATURDAY, JUNE 27, 1896.

THE ANTITOXIN TREATMENT OF DIPHTHERIA.

No scientific question before the medical profession is of more vital interest at present than the determining of the real efficacy of antitoxin in the treatment of diphtheria. The serum treatment of disease is on trial, and on the verdict that shall now be given are centered the high hopes of scientific medicine. Resting on the well-grounded basis of the germ theory of disease there has been elaborated the most logical and theoretically perfect system of therapeusis. Its practical application under the searching eye of skilled observers in a few special hospitals of Europe demonstrated its usefulness to a sufficient degree to commend it to the profession for more extended trial.

Questions in therapeusis are notoriously complex and difficult of solution. So many varying factors enter into the problem such as the tendency of acute diseases to spontaneous recovery, the diversity in the resistance power of the individual, the uncertainity in diagnosis, the possibility of intercurrent infection, etc., that the most carefully formed decision is never absolutely impregnable. It behooves the investigator therefore to carefully weigh all factors of uncertainty and welcome all honest criticism as a help to final truth.

The most elaborate and searching discussion that the subject of antitoxin in diphtheria has received in this country was presented before the New York Academy of Medicine, occupying entire time of the two last meetings. This appeared in a most complete form in our last issue. The discussion was based upon observation and reports of the use of antitoxin in *hospital* practice. Next week we shall print in full the carefully revised, official report of the American Pediatric Association which comprises an analysis of several thousand cases reported from the *private* practice of over six hundred different physicians.

Such a broad field of observation under the conditions to which the practical use of any remedial agent must finally be subjected will render this report one of the most valuable pieces of evidence that can be submitted to any tribunal. On the conclusions thus deduced will doubtless rest the future, in this country at least, of the antitoxin treatment of diphtheria.

THE FORMALIN TREATMENT OF WOUNDS.

IF a watery solution of gelatin be allowed to dry in formalin vapor, the gelatin loses altogether its customary characteristics. It is no longer affected by hot or cold water, nor by steam, nor by acids, nor alkalies; and the formalin which has entered into combination with it is chemically inactive. Experiments upon animals, however, proves that by the action of the living tissues the combination is broken up and formalin set free. Further experiments upon pigeons and dogs revealed the fact that if formalin gelatin is ground to a fine powder, mixed with colonies of bacteria, (staphylococci, streptococci, chicken cholera) and introduced into the animal, the germs are unable to grow and the wounds heal without reaction.

This result is apparently due to the action of the freed formalin, an action which continues for some time—several hours probably—and therein lies an advantage of this new material over all the old antiseptic agents. Schleich (*Therapeut. Monatsch.*, February, 1896) asserts that with the help of this material every acute suppuration can

be stopped in twenty-four hours, and every wound can be made to heal aseptically without further trouble. He has proved this by its use in 120 cases of acute suppuration, 93 aseptic wounds, 4 compound fractures, and 2 deep wounds of the scalp. In his experiments the principles of aseptic surgery were in all respects observed, except as to the wounds, which were only mechanically cleansed and thoroughly rubbed with the powder. In every case suppuration was stopped in twenty-four hours, and even the compound fractures healed without any fever. In fresh wounds the powder made with the blood a firm aseptic scab.

In order to be of service the powder has to be brought into contact with sound or inflamed tissue. In the presence of necrotic masses, or in the specific inflammations of syphilis and tuberculosis, it has very little effect. In order to produce a continuous supply of formalin vapor for the treatment of ulcers, etc., it is possible to digest the formalin by a pepsin-hydrochloric acid solution. The formalin-gelatin powder is first dusted on the wound, and then covered with a compress wet in a watery solution containing five per cent. of pepsin and .3 per cent. of hydrochloric acid.

The powder is made by drying 500 grams of purified and dissolved gelatin in the vapor of 25 drops of formalin. The gelatin is then rubbed to a powder and preserved in the presence of a single drop of formalin solution.

THE COMMISSIONERS OF CHARITIES OF NEW YORK CITY, AND A SECRET CURE FOR DRUNKENNESS.

The action of the Commissioners of Charities in setting apart two wards in Bellevue Hospital for the trial of a secret so-called "cure for drunkenness" is most deplorable. Not only is it inimical to the best interests of Bellevue Hospital and an unwarrantable affront to the medical profession, but it is the embodiment of a mistaken idea on the part of the Commissioners of Charities as to what their duties to the people are.

The owner of this so-called cure, a physician of this city, has tried for a number of years past, and, we believe, without material encouragement, to secure the approbation of physicians for a secret method of treating inebriety. It needs no explanation to show why such approbation has been withheld. One of the first principles which an individual who aspires to become an honest physician has thoroughly ingrained upon his conscience is that it is beneath his dignity as a man and inconsistent with his honesty as a physician, to withhold for personal and selfish gain any discovery which might be the means not only of mitigating the sufferings of the afflicted but of advancing the position of the profession of which he is a member. If his conscience becomes so blunted that this truism does not appeal to him, it is an unwritten as well as a written principle of ethics that he, by reason of such contemptuous acts, ceases to be a member of the profession in good standing, and that the honest members of the profession should disdain to have any intercourse whatever with such a person, or to make any use of the methods which appear to him of such intrinsic worth that he cannot afford to share them with the general profession.

Naturally, the individual who could resort to such quackish methods, would be extremely desirous of making his self-styled "wonderful discoveries" as well known to the undiscerning public, as possible, and in this instance no better scheme of bringing it before the public could have been concocted; for from the very first day the daily press has been filled with reports, apparently inspired, of the wonderful results which are obtained by the drink cure of Dr. ——— which is now being tried at Bellevue Hospital. Even after so short a time as three days, the superintendent of that institution, in the fulness of his therapeutic wisdom and diagnostic perspicaciousness, said to the reporters "It is the most wonderful thing I ever saw" and then his enthusiasm running away with him and becoming dramatic, he is reported to have said "it is a God-send."

To his eye the training of which has been obtained until a few weeks ago in a calling quite foreign to that of the medical profession, for he was a plumber, "the change in them is remarkable." To quote his own pithy sentence, "They look better, their eyes are brighter, and their step is not so slow."

The Commissioners of Charities who have done this overt act in this instance, we are informed, at the request of his Honor, the Mayor, are evi-

dently laboring under a mistaken conception of what their duties to the citizens of this city are. They are appointed that the charitable aims of the city may be carried out to the best advantage, and that those deserving of charity, the infirm, the incapacitated, and the sick shall derive the greatest benefit from it. It is not a part of their duty to make experiments or trials to discover the efficacy of therapeutic measures, of drugs, or of instruments. If it seems necessary to determine the value, or lack of value, of any medical measure for the benefit of the sick the proper persons to make such estimation are the visiting physicians, and not some outside person who may pray for the privilege.

It behooves the Committee of Inspection of Bellevue Hospital to lay aside the attitude of supine indifference and bring this matter clearly to the attention of the Commissioners. After they have done this commendably and without cavil, they should say to the honorable Commissioners that no secret measures, no measures protected by law, heralded though they may have been by some modern Mercury, approved of pontifically, and advocated by royalty, aristocracy, and plutocracy, have ever been the means of advancing the position of medical science one particle nor of ameliorating sickness or righting moral shortcomings.

If such enlightenment arouses in them a proper sense of their duties, they will at once put a stop to an experimentation which can only revert to the benefit of one—the worthy owner of an unworthy measure.

RESUME OF RECENT PROGRESS IN NEUROLOGY.

AT the recent meeting of the American Neurological Association two subjects of general interest were discussed: that of cerebral surgery, especially in its relations to epilepsy, and cerebritis. Great as were the expectations aroused at one time by the development of cerebral and cerebellar localization and its application by the surgeon to the removal of intracranial neoplasms, those who have had most to do with the subject have been gradually more appreciative of the defects in our present neurological knowledge and surgical methods. The discussion in Philadelphia only served to emphasize these. It is a matter of regret that the time allotted for debate was insufficient to permit of a full discussion. The truth is that we can only locate the cortical centers for the upper and lower extremities, the motor elements of speech, hearing, smell, perhaps also agraphia, while the localization of the other sensations and the different portions of the cerebellum is still open to doubt, and the site of the other mental faculties remains extremely uncertain. It is true that we can localize with remarkable accuracy at the base of the brain, the basal ganglia and the pons, but these structures are beyond the profitable reach of the surgeon's knife. Our information, therefore, although large, is by no means complete. Moreover, we have no means, before the operation, of differentiating between lesions of the cortex and the sublying white matter, and even at the operation a subcortical neoplasm can only be detected by probing with a needle, very often unsuccessfully; indeed, in one case, a well-known neurologist of this city never found the tumor until sections had been made of the brain after months of hardening, while the writer ran a needle three times (as was afterward demonstrated) through a round-celled sarcoma with a central cystic degeneration just below the cortex, and yet the surgeons could not find the growth, which came to view during careful *post-mortem* dissection. Multiple neoplasms may be present, too, as in a case of the writer's, where a melanoma was removed from the cortex of the cuneus without relief of the hemianopsia, because, as was shown by the necropsy a month later, there were several melanotic tumors throughout the optic radiations. To these obstacles there must be added another in cases of epilepsy, and that is the important question, whether the convulsions can be abolished by a successful removal of the lesion causing them. Many years ago the writer called attention to the fact that cases of epilepsy were reported as cured because the convulsions had been lessened in frequency or violence for short periods after resort to various operations and medicaments, evidently from the lack of appreciation by the reporter that much more favorable variations were frequently obtained spontaneously. In the writer's article in "Dercum's Text-book of Nervous Diseases" many cases are analyzed from this point

of view, to which number Mason has subsequently added others, showing that out of seventy patients only three were really cured in the sense that the attacks had ceased for three years after operation, while six were improved, fourteen were not improved, three died, one relapsed, two improved, but with bromids. The consensus of opinion at Philadelphia was in accordance with this view, although one speaker would have us take a standard of two years as sufficient to prove a cure; but it is difficult to perceive why we should do so. One gentleman made a curious suggestion that none but surgeons who had grown experienced and expert in cerebral surgery should ever operate. The question would fairly arise: How are operators to gain experience if they wait until they have obtained it? Notwithstanding these difficulties of the neurologist and the surgeon, however, there can be no question but what there will be a much more effective surgery of the future made possible by the constant advance in localization and in operative technic; and in the modern photography so unexpectedly afforded us by the Röntgen ray, and even in the immediate future we shall be greatly aided in this onward march by the skiagraphs of brain-tumors, which several gentlemen are already claiming to make.

Of greater interest to the physician was the very instructive paper of Putnam, upon "Hemorrhagic Cerebritis," and the ensuing discussion, which demonstrated, as has been shown by recent literature abroad, that cerebritis is a much more frequent disease than is generally supposed, and that it is very often clinically indistinguishable from meningitis, even the classical sign of retraction of the head being common to both affections.

Landon Carter Gray, M.D.

ECHOES AND NEWS.

Dr. Herman Knapp, the well-known oculist of New York, narrowly escaped drowning at Monmouth Beach, N. J., last Saturday. He was only rescued by the prompt and heroic assistance of his daughter.

The first death in Ward 33 at Bellevue Hospital, which was set apart recently for the treatment of chronic alcoholic cases with a secret preparation, was reported early this week.

A meeting of the executive committee of the Mississippi Valley Medical Association was held at Atlanta, on May 6th, and the following gentlemen were appointed to deliver addresses: Dr. H. N. Moyer, Chicago, address on medicine; Dr. Horace H. Grant, Louisville, address on surgery. The indications are that the meeting to be held at St. Paul, on October 20th, 21st, 22d, and 23d, will be the largest and most successful in the history of the Association.

Dr. Henry P. Walcott of Boston, has been elected president of the Massachusetts Medical Society for the ensuing year.

The American Surgical Association, at its annual meeting at Detroit, elected Dr. J. Collins Warren of Boston, president.

Dr. G. Frank Lydston of Chicago, has a book in press entitled: "Over the Hookah; the Tales of a Talkative Doctor," that will present humerous and pathetic character sketches and studies.

The Bowman Lecture before the Ophthalmological Society of Great Britain, was recently delivered by Professor Snellen of Utrecht. His subject was "The Influence of Light on Vision."

The Paris Faculty of Medicine has caused Dr. Roger, chief of its pathological department, to resign because he had been indirectly engaged in the secret manufacture of anti-streptococcic serum. Dr. Marmorick of the Pasteur Institute, was the first to present the claims of this new remedy.

Advices received from Korosko, Egypt, announce that cholera has made its appearance among the Egyptian troops at that place. The dispatches say that fourteen cases of the disease were discovered in the camp, seven of which had resulted fatally up to the time of writing. The advices add that great fear is entertained that the disease will spread throughout the Soudan expedition.

Harvard University, on behalf of its Medical School, has filed a bill in the United States Court in Chicago against the Harvard Medical College of Chicago, seeking to enjoin the latter from the use of the name "Harvard," as being a fraud upon the University and the public.

M. Metchnikoff, M. Roux, and Salimbani, of the Pasteur Institute, have been so far successful in their endeavors to prepare a cholera antitoxin that, by its use, they can save many of the rabbits infected with cholera virus, while the control animals invariably die.

Dr. Howard A. Kelly, in the *Johns Hopkins Hospital Bulletin*, has expressed his complete confidence in sterilizing of catgut with cumol. His approval was, in effect, that we now have a perfect method of sterilizing catgut with cumol, boiling at 155° centigrade, and we can use the gut with perfect freedom without fear of after-trouble. We are, therefore, almost as well off as if we used torsion; we simply add a little absorbable animal substance which disappears in a few days when it has done its work.

THE following letter from Jefferson to Jenner is copied from the *Brooklyn Medical Journal* for June. It shows how prompt Jefferson was to accept the new treatment. He and other members of his family personally practised the operation among their own connection and adherents:

MONTICELLO, Va., May 14, 1806.

SIR: I have received the copy of the evidence at large respecting the discovery of the vaccine inoculation, which you have been pleased to send me, and for which I return you my thanks. Having been among the early converts in this part of the globe to its efficacy, I took an early part in recommending it to my countrymen. I avail myself of this occasion to render you my portion of the tribute of gratitude due to you from the whole human family. Medicine has never before produced any single improvement of such utility. Harvey's discovery of the circulation of the blood was a beautiful addition to our knowledge of the ancient economy; but on a review of the practice of medicine before and since that epoch, I do not see any great amelioration which has been derived from that discovery. You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived; future nations will know by history only that the loathsome smallpox has existed, and by you has been extirpated. Accept the most fervent wishes for your health and happiness, and assurances of the greatest respect and consideration.

TH. JEFFERSON.

THE Berlin letter to the *Press and Circular* states that several changes in the personnel of the Institute have recently been effected. It is now just twenty years since the Institute was opened with two members—one for the medical and one for the veterinary department. Since then the number of members has steadily increased. There are now eight ordinary members, besides a number of associates. Another member is provided for, however, in next year's estimates, as the present staff is quite inadequate for the work demanded. The new member will undertake the department of public health, so far as it concerns food adulteration and offensive businesses. Dr. Josef Brandl, until recently at Munich, has been called to the new position, under the title of Regierungsrath, or Member of Council. He has for several years been Professor Tappeiner's assistant at the Pharmacological Institute at Munich.

ACCORDING to the *Medical Press and Circular* the coming scientific conventions in Germany will have many improvements in the Röntgen discovery laid before them. The latest news is that the apparatus has been so modified that a picture of the internal structures of the body can be thrown upon the fluorescent screen. The General Electrical Association announce from Berlin that it is possible, in this way, to demonstrate the internal structure of the head, larynx, and more especially the action of the respiratory organs and heart. If this be the case, it will simplify diagnosis of many organic lesions to a marvelous extent. Indeed, recent improvements in the new photography give promise of a future in scientific medicine that may be described as marvelous and revolutionary. Not the least remarkable feature of the matter is the lightning-like rapidity with which the whole subject of the X-rays has been investigated all over the world since the announcement of the discovery in the early part of the present year. It is announced that a practical demonstration of the fluorescent internal pictures will be made at the forthcoming surgical congress in Berlin.

BY order of Secretary Lamont, an examination into the physical condition of all army officers unfit for active service is being made. Those reported by the surgeon's certificate as permanently disqualified, may expect to be retired at once without reference to the usual age limit. It is said that this action was prompted by the small number of vacancies in the list and the want of places for the recent West Point graduates.

DR. PRIESTLEY has embodied in a report for the borough of Leicester, England, some interesting observations upon the earth's temperature and the prevalence of diarrheal diseases. Whenever the temperature of the earth, four feet below the surface, rises above 56° F., these intestinal affections become active, and the mortality tables for a fortnight later show them prominent among the causes of death. These results continue during the maintenance of this temperature and disappear after its subsidance.

ATTRACTED by the marked similarity, if not identity, of the bacillus of diphtheria and that found to exist in the nasal mucous membrane and its secretion in cases of ozena, certain Italian rhinologists have been led to try injections of the antitoxin in these heretofore intractable cases. The result in some thirty or forty patients has been quite unexpectedly gratifying. Of a series of thirty-two such cases, sixteen seemed radically cured, seven gave every promise of recovery, five were improved, and the remainder uncertain. The injection of ten cubic centimeters every day, or every second day, is usually followed by an immediate diminution in the odor and the amount of scabbing, while the secretion becomes more fluid and abundant. Duration of the treatment must vary with the exigencies of the individual case. Although it is entirely too early to regard such evidence as at all conclusive, especially when dealing with a disease so resistantly chronic, the theory underlying the experiment appears to be based upon a possible bacteriological relationship which would justify further investigation.

A NOVEL method of taking skiagraphs of the stomach is suggested by Dr. Hemmeter of Baltimore, in the last number of the *Boston Med. and Surg. Journal*. It was discovered by Rontgen, not only that metallic lead was quite opaque to the X-rays, but also the solution of its salts. The toxic effects of these prohibit their use as a means of distending the organ, but this objection is overcome by Dr. Hemmeter's proposition to first introduce a very thin and elastic rubber bag, which may afterward be filled with the solution and the picture taken.

A MACHINE has been invented by a Swedish engineer which will transform sterilized milk into butter in one

minute. Not only is time saved, but the butter is made absolutely pure and free from germs. The milk is heated in the sterilizer to 160° F. From the sterilizer it runs into a churning chamber, where it is cooled down to 60° in its progress, by means of very small cooling frames, through which iced water constantly passes, and which revolves with the churning chamber at the rate of six thousand revolutions a minute. Several advantages are claimed for this remarkable machine, which bids fair to create a revolution in butter-making upon a large scale. In the first place, by sterilizing the milk, disease germs, if they are in it, are destroyed, as well as the microbes which cause putrefaction of the butter. The process of buttermaking is so rapid that there is very little chance of any germs that may exist in the atmosphere of the dairy getting into the butter, especially as all, or nearly all, air must be forced out of the chamber of the machine by the extreme rapidity of the movement going on inside. When the butter is once pressed, the possibility of germ impregnation is almost eliminated. Thus, a wholesome and permanently pure butter is produced. Another advantage is that milk can be converted into butter directly after being obtained from the cow.

A verdict was given against a gold-cure in Boston last week. It seems that the proprietors quarreled. The one who had furnished the capital—$5000—wished to recover this amount because he claimed it had been fraudulently obtained. The member who was expected to furnish the experience had promised that the business should be successful and that at least a majority of the patients should be cured. It was abundantly proven that this part of the contract had not been kept, and hence the court sustained the claims of the party of the first part.

Dr. Roger S. Tracy, registrar of vital statistics, reports that for the week ended at noon, June 20th, there were 758 deaths in the city, of which 333 were cases of children under four years.

CORRESPONDENCE.

To the Editor of The Medical News.

Dear Sir: In the *Journal of the American Medical Association* there is a paragraph, "A Recruit for Achilles Rose," telling that Dr. Loeffler of Dresden, Germany, writes his prescriptions in Greek characters. With all due respect for Dr. Loeffler, one of the prominent German physicians, I wish to say that he is like some Catholics, who are more Catholic than the Pope. The Greeks themselves write their prescriptions as the physicians of other countries do, in Latin, with Latin characters, only the directions are, as a matter of course, written in Greek. Dr. Loeffler's idea, however, is an excellent one, and we might write our ordinations in Greek for the same reason for which the Greeks write them in Latin, namely, that the public should not read them.

Yours,

A. Rose.

New York,
June 16th.

REVIEWS.

Manual of Medical Jurisprudence and Toxicology. By Henry C. Chapman, M.D., Professor Institutes of Medicine and Medical Jurisprudence, Jefferson Medical College. Second edition, 254 pages, 35 illustrations, 3 colored plates. Philadelphia: W. B. Saunders, Publisher.

In many respects this volume of about 250 pages constitutes a most valuable addition to the working library of the general practitioner. It is essentially and very desirably practical, containing an abundance of material gathered from the everyday experience of one who is thoroughly familiar with most of his subject. Unfortunately, the author has overstepped in one sub-field the domain of personal knowledge, the chapter upon insanity, in its medico-legal aspects, indicating a most pitiable lack of information. Insanities, for example, are classified under three groups: amentia, mania, and dementia. Paranoia is not recognized, nor is the word mentioned, while melancholia the author describes as "a variety of mania." The paragraph upon homicidal mania is dangerously misleading in several statements, in that the author leaves the inference that homicidal impulses are found in one variety of insanity only, that there is characteristically entire absence of motive, and that no effort is made in such cases to escape detection or punishment. As this chapter was present in the first edition, it is difficult to conceive how it ever appeared in a second edition unchanged, a fact to be especially regretted, as it seriously mars an otherwise exceedingly creditable work.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P. Seventh American from the Eighth English Edition. Revised and enlarged by H. Montague Murray, M.D., F.R.C.P. Illustrated by 224 engravings. Philadelphia: Lea Brothers & Co., 1895.

The most active workers in the whole domain of medical science are unquestionably the pathologists. Through their unflagging zeal discoveries are added to discoveries with such great rapidity that even the most advanced textbooks are antiquated before they have reached the age of a lustrum.

No one could deny that the previous edition of Green's Pathology, though fully abreast of the progress in its subject at the time of publication, was no longer adequate to the needs of the student.

It is, therefore, meritorious on the part of the editor and the publishers to bring out another edition. The present one—which is the seventh American from the eighth English edition—has been carefully revised by H. Montague Murray, and takes account of nearly all the important advances in pathologic science. To select only one or two subjects we find for example, that the etiology of carcinoma is discussed with conciseness and impartiality, the editor very properly concluding that the parasitic nature of the cell-inclosures must still be considered as being *sub judice*. The chapter on diseases of the nervous sys-

tem is good, and the illustrations in it are well chosen. The article on inflammation has not been greatly modified, and reference to the rather important subject of chemotaxis is omitted. The infectious granulomata are treated with thoroughness, both from the bacteriologic and the anatomic standpoint. The editor has succeeded admirably in preserving the clearness of diction for which Green's Pathology has always been noted, and which makes the reading of the book so pleasant.

SYPHILIS IN THE MIDDLE AGES AND MODERN TIMES, being Vols. II and III of "Syphilis To-day and Among the Ancients." By DR. BURET, Paris. Translated from the French by A. H. Ohmann-Dumesnil, M.D.

Vol. II, "Syphilis in the Middle Ages," a historical sketch, essays to expound, by "scientific documents" and "historical and literary documents," in chapters 1 and 2 the pre-Columbian existence of syphilis. This the author accomplishes by narrating a string of indecent excerpts relating to the licentiousness of this era. He considers this stirring up of much filth "indispensable."

The remaining chapters of this volume discuss the relation of syphilis to the various epidemics, notably the epidemic of Naples, and are devoted to the same purpose—that of establishing the medieval existence of syphilis and of disproving its American origin.

Vol. III, "Syphilis in Modern Times," traces the history of syphilis and the growth in its treatment from the Middle Ages down to the present time.

The general tone of this work, whether intended so or not, is distinctly sensational.

VOICE BUILDING AND TONE PLACING. By H. HOLBROOK CURTIS, M.D. D. Appleton & Co., New York.

THE most interesting part of this book, from a medical standpoint, is found in chapters VI and VII, the origin of certain diseased conditions of the vocal cords produced by improper use of the voice, "Nodules of Attrition," alias "Corns of the Vocal Cords," alias "*Betes Noires* of Artists." The author gives slight attention to the pathology or nature of these, but devotes some space to their etiology.

The etiology is based upon the supposition that the vocal cords while vibrating act like reeds. Much energy and space is devoted to prove that they act in this manner, and many diagrams are given to illustrate the motion of the cords while vibrating, and the author goes into a detailed description of the stroboscope, by means of which he has seen the cords do all these things. Now, if the vibrating cord is segmented after the manner of reeds, we will have the same arrangement of partial tones in the voice that we have in the reed; because it is the segmentation of the cord while vibrating that gives partial tones. By means of properly tuned resonators one is able to pick out the partial tones of the voice, or any other musical sound. The first overtone of the voice is the octave produced by the cord vibrating in two equal segments. The second overtone, the fifth of the first octave produced by three equal vibrating segments. The third overtone, the octave produced by four segments. The fourth overtone, the third of the second octave produced by five segments. The fifth overtone, the fifth of the second octave produced by six segments. The sixth overtone, the minor seventh of the second octave produced by seven segments, and the seventh overtone the third octave, produced by eight segments. Now the overtones of a reed do not lie in this series. The first overtone of a reed lies between the sixth and seventh partial tones of the voice; hence we have five overtones in the voice before we come to the first overtone of the reed. These five overtones are the most important in determining the quality of the voice. Recent investigations have demonstrated that when the lower partial tones are weak, we get the disagreeable quality of twang which is known as "reedy"; if we examine the overtone of a string, we find that it has precisely the same relation to the fundamental that the overtones of the voice do, and we are forced to conclude that the vibrating cord acts like a string and not like a reed. Again, we find the same factors brought into use in raising the pitch in both the cord and the string *i.e.*, length, weight, and degree of tension. By the proper mechanism we can change the length, weight, and amount of tension of the vibrating cord, just as we find different lengths, weights, and degrees of tension in stringed instruments. The conditions which determine the pitch of the reed are length, weight, and rigidity (elasticity). The cord, like the string, is attached at both ends, and is thus capable of being subjected to different degrees of tension, while the reed is free at one end, and tension has nothing to do with its pitch.

On page 144, Fig. 38, Dr. Curtis gives us an illustration of the first stage in the development of these "nodules." Anyone who has ever seen the vocal cords in action, or who understands the anatomy of the larynx, would know that this is an impossible position of the cords. There is no possible means of getting a separation of the anterior attachments of the cords while they are approximated in the middle. As the reed theory, on which the author depended to substantiate this position (see p. 124), has been exploded, there is nothing left to fall back upon. Figs. 39 and 40 can only be interpreted as examples of tumors of the vocal cords, which nothing but surgical interference could remove.

It is ridiculous to suppose, in the first place, that anything resembling the structure of a corn could form on the vocal cords, and in the second place, if it had been formed, it would be impossible to remove it in a few hours, or a few days even, as the author claims to do by simple tone exercises. Fig. 41 is an impossible position of the cords, as their front attachments are separated. Fig. 42 shows a paresis of the intrinsic muscles.

Chapter VI is a very troublesome one. It contains among other things the author's theory of registers, which, to say the least, is peculiar. On page 132 there is a diagram to illustrate that there is no segmentation of the cord in the chest register. On page 133 diagrams illustrating the segmentation of the cords in the head register. The truth is that there is far more segmentation of the cord in the lower than the higher tones. The higher the pitch the fewer partial tones, and these partial tones are dependent on segmentation of the cord. On page 134

we read "The vocal cord is thus divided into two unequal segments." This never happens, as the relations of our partial tones would then be disturbed, but they are always the same. Space forbids a detailed criticism of his treatment of registers. Suffice it to say that with the proper mechanism all the changes necessary to produce any pitch are brought about by the simultaneous action of the muscles: the crico-thyroid, which gives the degree of tension required and the thyro-aritenoideus which produces the shortening and the lessening of the weight of the vibrating cord. These muscles act through the whole range of the voice, therefore there is no change in mechanism and no registers. Registers only occur in bad productions.

On page 116 occurs the passage, "The tones are not always the result of the vibration of the cords themselves, but of the vibration of air columns in the vocal tube and resonating cavities." This is an impossibility, as the vocal cords originate all the vibrations. These resonance cavities can only reinforce or eliminate certain partial tones, and it is the use of the resonance cavities in this way which enables us to articulate. The vocal cords originate the same series of vowels, and the size and shape of the resonance cavities determine which series of waves shall be reinforced, and which shall be suppressed, thus determining the vowel sound. This same error is made on page 83 in regard to the sounding boards of instruments. Sounding boards only reinforce, they do not originate tone.

Chapter III is devoted to breathing. The author decides that the high chest position, combined with inferior cortal breathing, is the correct thing. He bases this decision on the supposition that the high chest position gives a large amount of chest resonance, thereby adding greatly to the carrying power and strength of the tone. We believe that the essential feature of the resonator is a free communication with the external air. The chest, while a tone is being produced, is a closed cavity, therefore it cannot act as a resonator to reinforce the tone, and chest resonance is absurd. It is true that the air in the chest vibrates, but these vibrations cannot get out to create a disturbance in the external air. The only cavities which can reinforce tone are the pharynx, nose, and mouth. The author states, page 73, that the antra, and sphenoidal and frontal sinusus are important resonance cavities. This is not true, as they are practically closed cavities, as far as free communication with the external air is concerned.

Chapter II, treats of the anatomy and physiology of the larynx. On page 42 is found "The strength of the expiratory blast effects the pitch of the tone." This is not true, as the strength of the blast determines the intensity of the tone only. On page 95, is this statement. "A simple fundamental tone is not known in music," on page 88, "In an organ each pipe is constructed so as to give only its fundamental note" (tone). On page 95, the author speaks of "undertones" phenomena unknown to authorities in physics. On page 96, "The fact that the fundamental tone sets the air into secondary vibrations can be shown." The fundamental as well as the overtones are produced by the vibrator. One set of air waves cannot originate another set. On page 101, "The same conditions for the production of overtones exist in the reed as in string instruments." We have just shown that the same conditions do not exist, and that their overtones are very different. The first overtone of the reed is between the fifth and the sixth of the string. The second, between the sixth and seventh of the string. The third, between the thirty-third and thirty-fourth of the string, and the fourth, between the fifty-fifth and fifty-sixth of the string. On page 144, he refers to the "longitudinal vibrations of the vocal cords," a physical impossibility. On page 155, "After the experience with the correct focus of tone, etc." When we consider that the sound waves of C2 are about nine feet long, and C5, its seventh overtone, about one foot long, it is a little difficult to see how these waves, which are originated by the vocal cords, can be focused "dans le masque." On the same page, "These are the experiences, so much appreciated by singers, that we employ for the reduction of nodules of attrition on the cords, which exercises, strange to say, have been the subject of ridicule by certain laryngologists, who have undoubtedly not given the subject of physics a proper amount of consideration."

We have seen that the "nodules" are a myth, or at least nothing more serious than collections of mucus, which are readily thrown off by vibration of the cords. On page 55, "We are indebted to the stroboscope for the scientific vindications of our theory and treatment of singers' nodules." The stroboscope, instead of vindicating his theory of nodules, has led him sadly astray. Finally, Chapter IX, is devoted to voice figures. These diagrams simply illustrate the vibration of plates and membranes, and have nothing whatever to do with the voice.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 26, 1896, TO JUNE 1, 1896.

Leave of absence for four months on surgeon's certificate of disability, is granted to First Lieutenant Benjamin Brooke, assistant surgeon.

The order assigning Captain Ashton B. Heyl, assistant surgeon, to duty at Fort Canby, Washington, is revoked; he is relieved from duty at Fort Thomas, Kentucky, and ordered to Fort Riley, Kansas, for duty, relieving Captain Thomas V. Raymond, assistant surgeon. Captain Raymond, on being thus relieved, is ordered to Fort Canby, Washington, for duty,

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDED MAY 31, 1896.

Hamilton, J. B., surgeon, granted leave of absence for ten days, May 23, 1896.

Brown, B. W., passed assistant surgeon, granted leave of absence for six days, May 25, 1896.

Gardner, C. H., assistant surgeon, ordered to examination for promotion, May 27, 1896.

BOARDS CONVENED.

Board convened to meet in Washington, D. C., June 15, 1896, for the examination of officers for promotion and candidates for appointment in service. Surgeon G. W. Stoner, chairman; Surgeon Fairfax Irwin, Passed Assistant Surgeon C. E. Banks, recorder, May 25, 1896.

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